SITE DEVELOPMENT PLAN
GREMPLER REALTY, INC. OFFICE BUILDING
5TH ELECTION DISTRICT
HOWARD COUNTY, MD
SDP 78-083

⚠ PLAN REVISION NOTE: ON OR AROUND JULY, 15, 2016 CAPITAL PROJECT 1158 titled HOWARD COMMUNITY COLLEGE STREAM RESTORATION PROJECT WAS CREATED TO GRADE AND STABILIZE THE EXISTING STREAM BANK ALONG LITTLE PATUXENT TRIBUTARY 1 ILLUSTRATED WITHIN THE LIMITS OF THIS SITE PLAN. AN ALTERNATIVE COMPLIANCE WAS PROCESSED THROUGH THE DEPARTMENT OF PLANNING AND ZONING UNDER WP-17-021, APPROVED ON OCTOBER 24, 2016, TO WAIVER SECTIONS 16.155(a)(3)(ii) and 16.1205(a)(7) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SUBJECT TO SIX NUMBER OF APPROVAL CONDITIONS. FOR THE DETAILED CONDITIONS OF APPROVAL AND THE CURRENT SITE CONDITIONS WITHIN THE DISTURBED AREA PLEASE SEE CAPITAL PLAN PROJECT PLAN.

GENERAL NOTES

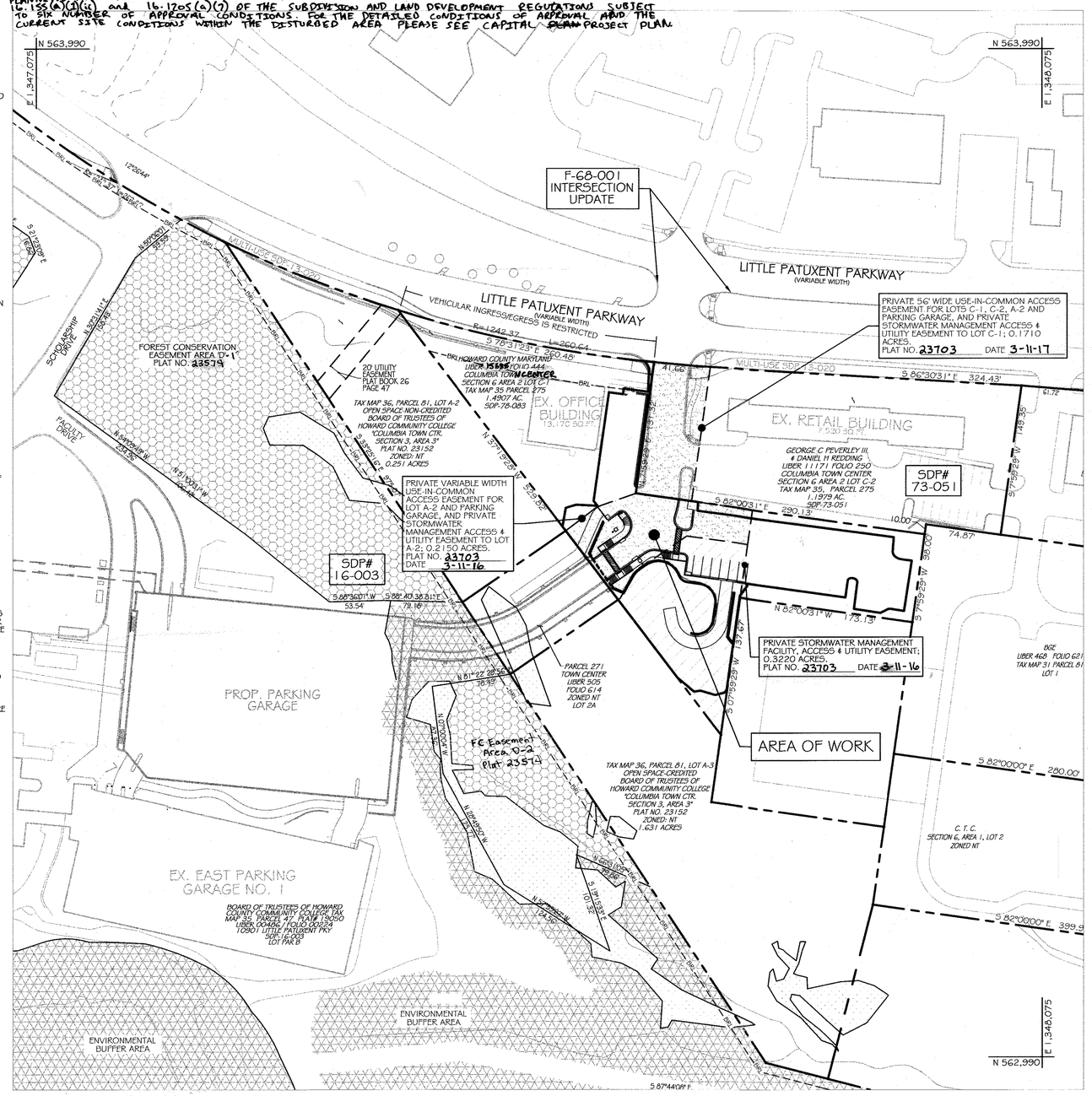
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" (800-257-7777) AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK.
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
4. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN IS BASED UPON A SURVEY CONDUCTED BY KCI TECHNOLOGIES, INC. IN SEPTEMBER 2014 AND AERIAL TOPO FROM VIRGINIA RESOURCE MAPPING IN APRIL 27, 2009.
5. OBSTRUCTIONS SHOWN ON THESE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. KCI TECHNOLOGIES, INC. DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION. IN THE EVENT THAT INFORMATION IS IN CONFLICT WITH INFORMATION OUTLINED, THE CONTRACTOR SHALL IMMEDIATELY BRING IT TO THE ATTENTION OF THE ARCHITECT PRIOR TO STARTING ANY WORK.
6. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES SHOWN HEREON BEFORE STARTING ANY WORK ON THESE PLANS. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR THE COST OF ANY AND ALL DAMAGES WHICH OCCUR AS A RESULT OF A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES TO REMAIN.
7. CONTRACTOR SHALL REMOVE DRIVEWAY ENTRANCES, STRUCTURES, AND CONCRETE WALKS TO LIMITS INDICATED ON THE DRAWING.
8. CONTRACTOR SHALL NOT PROCEED WITH ANY DEMOLITION WORK UNTIL ALL UTILITY DISCONNECTIONS ARE COMPLETED AND VERIFIED IN WRITING.
9. CONTRACTOR SHALL INSURE THAT ALL MATERIAL REMOVED FROM DEMOLISHED STRUCTURES ARE LEGALLY DISPOSED OF OFF-SITE.
10. SEE DEMOLITION PLAN FOR APPROXIMATE LIMITS OF SIDEWALK AND PAVING REMOVAL.
11. EXISTING CONCRETE CURB AND SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT. NO PATCHING SHALL BE PERMITTED.
12. A GEOTECHNICAL STUDY WAS PREPARED BY FROEHLING & ROBERTSON, INC., DATED MAY 2015.
13. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
14. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THIS PLAN PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
15. TRAFFIC CONTROL DEVICES:

    A.) ALL STOP AND YIELD SIGNS AS WELL AS ANY STREET NAME SIGNS (SNS) MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.

    B.) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES MDMUTCD).

    C.) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
16. ALL PLAN DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
17. CONTRACTOR TO ADJUST TOP OF CURB GRADES AS NECESSARY TO PROVIDE SMOOTH TRANSITION TO EXISTING.
18. SAW CUT EXISTING PAVEMENT AS NEEDED TO INSTALL NEW CONSTRUCTION.
19. THE CONTRACTOR SHALL NOTE THAT IN CASE OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN.
20. TRENCH BACKFILL IN GRASS AREAS SHALL BE COMPACTED TO A MINIMUM 90% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH A.A.S.H.T.O. VERIFY DESIGNATION T-180, METHOD C. TRENCH BACKFILL IN STRUCTURAL AND PAVEMENT AREAS SHALL BE PLACED IN EIGHT INCH LOOSE LIFTS AND COMPACTED TO AT LEAST 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557). IN PAVED AREAS, FILL BELOW THE TOP 12 INCHES SHOULD BE COMPACTED TO 97%.
21. CONTRACTOR SHALL ADJUST ALL EXISTING UTILITIES, I.E. MANHOLE FRAMES AND COVERS, ETC. WITHIN THE LIMITS OF THE CONTRACT TO PROPOSED GRADES AS REQUIRED.
22. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDING STRUCTURES AT ALL TIMES.
23. CONTRACTOR SHALL COORDINATE ALL DISCONNECTIONS AND REMOVAL OF EXISTING GAS, ELECTRIC AND TELEPHONE SERVICES AND EQUIPMENT WITH BALTIMORE GAS & ELECTRIC AND VERIZON.
24. CONTRACTOR SHALL INSTALL SEDIMENT CONTROLS PRIOR TO BEGINNING ANY WORK AND MAINTAIN SEDIMENT CONTROLS THROUGHOUT THE ENTIRE DURATION OF DEMOLITION AND CONSTRUCTION ACTIVITIES.
25. ALL EXCAVATION SHALL BE BACKFILLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. IN THE EVENT THAT A PORTION OF A UTILITY IS TO BE REMOVED THE CONTRACTOR SHALL TERMINATE AND CAP TO THE LIMITS INDICATED IN ACCORDANCE WITH ALL STATE AND LOCAL REQUIREMENTS.
26. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
27. STORM WATER MANAGEMENT WATER QUALITY HAS BEEN PROVIDED IN ACCORDANCE WITH 2010 MARYLAND STORMWATER MANAGEMENT ORDINANCE AND REVISED 2010 STORMWATER MANAGEMENT DESIGN MANUAL. THERE IS ONE (1) PRACTICE M-6 MICRO-BIORETENTION AREA (SHOWN ON SDP-16-003) AND ONE (1) F-1 SURFACE SAND FILTER. ALL PRACTICES WILL BE PRIVATELY OWNED AND/OR MAINTAINED IN THEIR ENTIRETY BY HOWARD COMMUNITY COLLEGE.
28. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 35C5 AND 35C5 WERE USED FOR THIS PROJECT.
29. SEWER IS PUBLIC, CONTRACT NO. 299-W&S SEWER DRAINAGE AREA: PATUXENT TREATMENT PLANT: LITTLE PATUXENT WWTP
30. SUBJECT PROPERTY ZONED NT PER 10/6/13 COMPREHENSIVE ZONING PLAN AND FDP-84-A.
31. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
32. SEE DEPARTMENT OF PLANNING AND ZONING FILE NO. PB-26, SDP-70-56, SDP-77-106, WP-01-98, AND FDP-84-A, F-14-051, SDP-12-175, F-16-077
33. LANDSCAPING FOR THIS RED-LINE REVISION IS NOT REQUIRED SINCE NO NEW STRUCTURES ARE ADDED AND THE STORMWATER MANAGEMENT FACILITY IS A SAND FILTER. THIS SITE IS EXEMPT FROM FOREST CONSERVATION OBLIGATIONS SINCE IT IS LOCATED IN THE NEW TOWN ZONING DISTRICT.
34. EXISTING PARKING CALCULATIONS:

EXISTING USE:	NET LEASABLE OFFICE SPACE
REQUIRED PARKING:	2/1000 SF OF NET LEASABLE OFFICE SPACE (PER FDP-84-A)
NET LEASABLE SQUARE FOOTAGE:	13,170 SF
TOTAL REQUIRED SPACES:	26.34 SPACES
EXISTING PARKING SPACES PROVIDED:	65 SPACES
PROPOSED PARKING SPACES PROVIDED:	58 SPACES



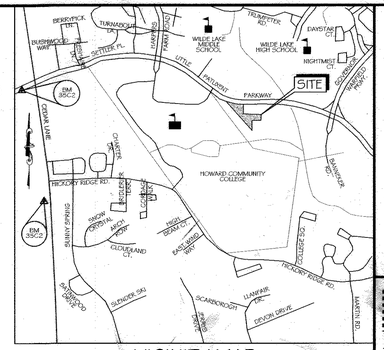
LOCATION MAP
SCALE: 1"=60'

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60ft.

BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562148.450	1344554.472	452.267



VICINITY MAP
SCALE 1" = 1000'
ADC MAP: 15 GRID: D6

LEGEND

- PROPERTY LINE
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENTS
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- PRIVATE VARIABLE WIDTH USE-IN-COMMON ACCESS EASEMENT AND PRIVATE STORMWATER MANAGEMENT ACCESS & UTILITY EASEMENT
- PRIVATE STORMWATER MANAGEMENT FACILITY, ACCESS, & UTILITY EASEMENT

SITE ANALYSIS DATA SHEET

1. SITE ADDRESS: 10741 LITTLE PAUTUXENT PKWY, COLUMBIA, MD 21044
2. OWNER/APPLICANT: HOWARD COUNTY MD
3. TAX ACCOUNT NO. : 15-016663
4. PROPERTY REFERENCE: MAP 35, GRID 6, LOT C1, PARCEL 275, ELECTION DISTRICT NO. 5
5. ZONING: NT
   EXISTING USE: OFFICE BUILDING
   PROPOSED USE: OFFICE BUILDING
6. TOTAL AREA OF SITE: 1.49 ACRES
7. LIMIT OF DISTURBANCE (SDP-78-083): 37,554 S.F. (0.86 AC.)

INDEX OF DRAWINGS

PERMIT INFORMATION CHART					
SUBDIVISION NAME TOWN CENTER			SECTION/AREA 6/2	LOT/PARCEL NO. C-1	
PLAT NUMBER: PLAT BOOK 26/ FOLIO 47, 23703	GRID# 35-6	ZONING NT	TAX MAP# 35	ELECT. DISTR. 5TH	CENSUS 6056.02

ADDRESS CHART	
BLDG.#	STREET ADDRESS
1	10741 LITTLE PATUXENT PARKWAY

PURPOSE STATEMENT:
THE PURPOSE OF THESE RED-LINE REVISIONS (NEW SHEETS L3 AND SHEETS 4 TO 23) IS TO SHOW PARKING LOT REVISIONS, ADD THE USE-IN-COMMON ACCESS EASEMENT AND STORMWATER MANAGEMENT EASEMENT ON LOT C-1 IN CONJUNCTION WITH THE PROPOSED HOWARD COMMUNITY COLLEGE EAST PARKING GARAGE NO. 2 (SDP-16-003). RED-LINE REVISIONS TO SDP-73-051 HAVE BEEN PROCESSED TO SHOW REVISED PARKING AREAS AND REVISED USE IN COMMON ACCESS EASEMENT ON LOT C-2 FOR ACCESS TO LITTLE PATUXENT PARKWAY.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16
Chief, Division of Land Development — Date 3-14-16
Chief, Development Engineering Division — Date 2-12-16

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES
KCI TECHNOLOGIES — Engineers, Planners, Surveyors, Construction Managers
936 Ridgebrook Road, Sparks, MD 21152
Phone: (410) 316-7800
Fax: (410) 316-7950
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY, INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK 26 / FOLIO 47
TOWN CENTER, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BISSETT — No. 031089 — PROFESSIONAL ENGINEER
1-15-16

ISSUE

NO.	DESCRIPTION	DATE
1	PLAN REVISION NOTE	11/9/2016

DRAWING TITLE:
TITLE SHEET

DRAWING NO.
T1.00
SHEET: 1 OF 27

SCALE: 1" = 60'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

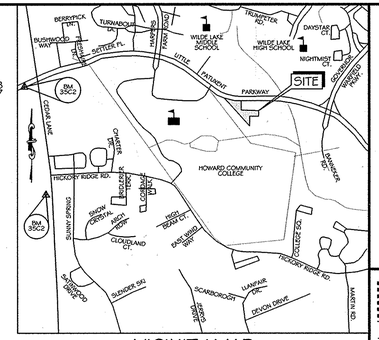
DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562148.450	1344554.472	452.267



VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6

DEMOLITION NOTES

1. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" (800-257-7777) AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK.
2. NO WORK SHALL BEGIN UNTIL THE PROPER PERMITS HAVE BEEN RELEASED BY HOWARD COUNTY.
3. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN IS BASED UPON A SURVEY CONDUCTED BY KCI TECHNOLOGIES, INC. JUNE 2013 AND AERIAL TOPO FROM VIRGINIA RESOURCE MAPPING APRIL 27, 2009.
4. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. KCI TECHNOLOGIES, INC. DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION.
5. CONTRACTOR SHALL NOT PROCEED WITH ANY DEMOLITION WORK UNTIL ALL UTILITY COMPANIES HAVE VERIFIED IN WRITING THAT DISCONNECTIONS HAVE BEEN COMPLETED.
6. CONTRACTOR WILL INSTALL A TEMPORARY CONSTRUCTION FENCE AROUND THE CONSTRUCTION AREA WHILE MAINTAINING ACCESS TO THE ADJACENT PUBLIC SIDEWALKS.
7. CONTRACTOR WILL SECURE THE CONSTRUCTION AREA AT THE END OF EACH WORKING DAY AND WILL INSPECT THE SECURITY FENCING TO INSURE ITS INTEGRITY.
8. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH MDSHA AND OSHA REGULATIONS AS THEY PERTAIN TO EXISTING ADJACENT BUILDING WALLS AND PUBLIC SIDEWALKS AND PROVIDING "SAFE" PASSAGE TO THEM.
9. CONTRACTOR WILL INSPECT AND TAKE PICTURES OF ADJACENT BUILDING WALLS AND RETAINING WALLS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION ON THE SITE. EXISTING WALL CRACKS (IF ANY) WILL BE NOTED.
10. CONTRACTOR WILL CONTINUALLY MONITOR THE WALLS OF THE ADJACENT BUILDINGS AND RETAINING WALLS FOR ANY SIGNS OF STRUCTURAL DISTRESS. IF ANY DISTRESS IS NOTED, CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY OWNER, KCI TECHNOLOGIES, INC. AND DESMAN ASSOCIATES.
11. CONTRACTOR WILL NOT EXPOSE, UNDERMINE, OR IMPACT THE ZONE OF INFLUENCE FOR FOOTINGS AND FOUNDATIONS OF ADJACENT BUILDINGS. CONTRACTOR WILL BE RESPONSIBLE FOR THE COST TO REPAIR ADJACENT BUILDINGS THAT ARE DAMAGED DUE TO HIS OPERATION.
12. CONTRACTOR WILL PROVIDE THE NECESSARY MEANS TO CONTROL DUST AND AIR QUALITY DURING THE DEMOLITION PROCESS.
13. CONTRACTOR WILL SAWCUT EXISTING PAVING TO MINIMIZE DAMAGE TO EXISTING PAVING REMAINING.
14. IN CONJUNCTION WITH THE REMOVAL OF CONCRETE APRONS AND WALKS, THE CONTRACTOR IS RESPONSIBLE TO ADJUST ALL PUBLIC UTILITIES (I.E. MANHOLE FRAMES & COVERS, ELECTRIC HAND BOXES, VALVE COVERS) TO BE FINISHED SIDEWALK GRADES.
15. ANY EXISTING CURB AND GUTTER & CONCRETE SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT.
16. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK SHOWN ON THESE DRAWINGS UNLESS OTHERWISE NOTED.
17. THE DEMOLITION INFORMATION SHOWN ON THIS DRAWING IS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LIMITS OF DEMOLITION AND REMOVAL OF AFFECTED SITE ITEMS.
18. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES SHOWN HEREON BEFORE STARTING ANY WORK ON THESE PLANS. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR THE COST OF ANY AND ALL DAMAGES WHICH OCCUR AS A RESULT OF A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES TO REMAIN.
19. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES.
20. CONTRACTOR SHALL INSTALL SEDIMENT CONTROLS PRIOR TO BEGINNING ANY WORK AND MAINTAIN SEDIMENT CONTROLS THROUGHOUT THE ENTIRE DURATION OF DEMOLITION AND CONSTRUCTION ACTIVITIES.
21. ALL UTILITY LINES, ELECTRICAL DUCT BANKS, STRUCTURES, ETC. ARE TO BE REMOVED IN THEIR ENTIRETY UNLESS OTHERWISE INDICATED. ALL EXCAVATION SHALL BE BACKFILLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. IN THE EVENT THAT A PORTION OF A UTILITY IS TO BE REMOVED THE CONTRACTOR SHALL TERMINATE & CAP TO THE LIMITS INDICATED IN ACCORDANCE WITH ALL STATE & LOCAL REQUIREMENTS AND THE PROJECT REQUIREMENTS.
22. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
23. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE A/E IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE A/E, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
24. CONTRACTOR SHALL CAP EXISTING UTILITY CONNECTIONS AND PROVIDE THEIR HORIZONTAL AND VERTICAL LOCATIONS TO THE OWNER AND THE ENGINEER.
25. CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS FROM THE SITE AND DISPOSE OF IT AT AN APPROVED, PERMITTED DISPOSAL FACILITY. NO RUBBLE IS TO BE LEFT ON SITE.
26. BURNING OF COMBUSTIBLE MATERIALS FROM DEMOLISHED STRUCTURES WILL NOT BE PERMITTED.
27. NO EXPLOSIVES WILL BE USED IN THE SITE DEMOLITION.
28. ALL TREES WITHIN THE LOD ARE TO BE REMOVED UNLESS OTHERWISE NOTED.

LEGEND

- EX. SANITARY MANHOLE
- EX. ELECTRIC MANHOLE
- EX. LIGHT POLE
- EX. WATER METER
- EX. SIGN
- EX. UTILITY POLE
- EX. BOLLARD
- EX. DECIDUOUS TREE
- EX. CONIFEROUS TREE
- EX. GAS VALVE
- EX. GUY WIRE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. CLEANOUT
- EX. 15" D — EX. STORM DRAIN
- G — EX. GAS LINE
- PRIVATE 6"S — EX. SANITARY
- E — EX. ELECTRIC
- T — EX. TELEPHONE
- 8"WATER — EX. WATER

- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- APPROXIMATE LIMITS OF PAVING, BUILDINGS, CONCRETE AND CURB & GUTTER TO BE REMOVED
- APPROXIMATE LIMITS OF MILL AND OVERLAY
- WB — 25' WETLAND BUFFER
- SB — 75' STREAM BUFFER
- WUS — WATERS OF THE U.S.
- GmB (C), UuB (D) — SOILS LINES
- SWM-1 — SOIL BORINGS
- PROPERTY LINE
- 12" — REMOVE EX. VEGETATION
- REMOVE EX. UTILITY

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16
Chief, Division of Land Development — Date 3-14-16
Chief, Development Engineering Division — Date 2-12-16

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET)
SCALE: 1" = 30'

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTORS EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: 1" = 30'

DESMAN ASSOCIATES

KCI TECHNOLOGIES — Engineers, Planners, Surveyors, Construction Managers

10272 Baltimore Boulevard
Jessup, MD 20794
Phone (410)316-7800
Fax (410)316-7803
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD

PARCEL 275, TAX MAP: 35, GRID: 6
FIRST ELECTION DISTRICT, 6TH TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089
EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BLAKE — No. 031089 — PROFESSIONAL ENGINEER
1-15-16

NO.	DESCRIPTION	DATE
	I S S U E	

DRAWING TITLE:
EXISTING CONDITIONS / DEMOLITION PLAN

DRAWING NO.
C2.00
SHEET: 3 OF 27

SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS, HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.630	1344204.150	464.133
35C2	HOW CO MON	562148.450	1344554.472	452.267

VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6

LEGEND

- PROPERTY LINE
- 450 EX. INDEX CONTOUR
- 451 EX. INTERMEDIATE CONTOUR
- EX. LIGHT POLE
- EX. FENCE
- EX. 15" DRAIN — EX. STORM DRAIN
- EX. GAS — EX. GAS LINE
- EX. 6" SANITARY — EX. SANITARY
- EX. ELECTRIC — EX. ELECTRIC
- EX. TELEPHONE — EX. TELEPHONE
- EX. CABLE TV — EX. CABLE TV
- EX. 8" WATER — EX. WATER
- GfB / BaA — SOILS LINE
- LOD — LIMIT OF DISTURBANCE
- 400 — PROP. CONTOUR
- 408.00x — PROP. SPOT ELEVATION
- E — PROP. ELECTRIC
- 12" D — PROP. STORM DRAIN
- PROP. MANHOLE
- PROP. INLET
- PROP. BOLLARD
- PROP. CURB AND GUTTER
- J — PROP. ELECTRIC JUNCTION BOX
- PROP. LIGHT POLE
- WB — 25' WETLAND BUFFER
- SB — 75' STREAM BUFFER
- WUS — WATERS OF THE U.S.
- 100 YR. FLOOD LINE
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- PRIVATE VARIABLE WIDTH USE-IN-COMMON ACCESS EASEMENT AND PRIVATE STORMWATER MANAGEMENT ACCESS & UTILITY EASEMENT
- PRIVATE STORMWATER MANAGEMENT FACILITY ACCESS, & UTILITY EASEMENT

GENERAL NOTES

1. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN IS BASED UPON A SURVEY CONDUCTED BY KCI TECHNOLOGIES, INC. IN MAY 2015 AND AERIAL TOPO FROM VIRGINIA RESOURCE MAPPING IN APRIL 27, 2009.
2. THE CONTRACTOR SHALL PROVIDE PRIVATE SUBSURFACE UTILITY LOCATION SERVICE, TO LOCATE AND DESIGNATE ANY AND ALL EXISTING UNDERGROUND UTILITIES, PRIOR TO THE START OF ANY CONSTRUCTION.
3. CONTRACTOR SHALL TEST PIT, AS REQUIRED, ALL EXISTING UTILITIES WITHIN THE LIMITS OF CONSTRUCTION TO DETERMINE THE EXACT LOCATION AND DEPTH. CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN WHAT IS FOUND IN THE FIELD AND THAT INDICATED ON THE PLAN TO KCI TECHNOLOGIES, INC. ALL UTILITIES SHALL BE RETAINED UNLESS INDICATED OTHERWISE. DAMAGE TO EXISTING CONSTRUCTION AND UTILITIES TO REMAIN SHALL BE REPAIRED AS REQUIRED, TO THE OWNERS SATISFACTION, AT THE EXPENSE OF THE CONTRACTOR.
4. CONTRACTOR SHALL REMOVE AND REPLACE ALL DAMAGED CURB AND GUTTER, UTILITIES, SIDEWALKS, PAVEMENT, ETC., THAT ARE NOT INDICATED TO BE DEMOLISHED, AS REQUIRED FOR TIE-IN TO NEW CONSTRUCTION.
5. CONTRACTOR SHALL REPAIR AND MAINTAIN SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF CONSTRUCTION ARE STABILIZED WITH THE APPROVAL OF INSPECTOR. ALL SEDIMENT CONTROL DEVICES SHALL BE REMOVED AND DISTURBED AREAS RESTORED AND STABILIZED.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST AND WORK REQUIRED TO ADJUST EXISTING AND PROPOSED UTILITIES AND APPURTENANCES TO FINISHED GRADES WITHIN THE LIMITS OF WORK.
7. OBSTRUCTIONS SHOWN ON THESE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. KCI TECHNOLOGIES DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
8. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING NEAR OR OVER EXISTING UTILITIES.
9. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THIS PLAN PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THESE CHANGES.
12. EX. CURB, GUTTER, AND SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT.
13. DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
14. ALL CONSTRUCTION SHALL FOLLOW LATEST HOWARD COUNTY DEPT. OF PUBLIC WORKS STANDARD SPECIFICATIONS & DETAILS OF CONSTRUCTION OR AS DETAILED ON THE DRAWINGS.
15. MDE PERMITS FOR DISTURBANCE OF ADJOINING ENVIRONMENTAL FEATURES AS APPLICABLE HAVE BEEN APPLIED FOR UNDER SDP-16-005/HOWARD COMMUNITY COLLEGE PARKING GARAGE NO. 2.

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director	3-14-16 Date
Chief, Division of Land Development	3-14-16 Date
Chief, Development Engineering Division	2-16-16 Date

PRIVATE 56' WIDE USE-IN-COMMON ACCESS EASEMENT FOR LOTS C-1, C-2, A-2 AND PARKING GARAGE, AND PRIVATE STORMWATER MANAGEMENT ACCESS & UTILITY EASEMENT TO LOT C-1, 9.1710 ACRES. PLAT NO. 23703 DATE 3-11-16

PRIVATE VARIABLE WIDTH USE-IN-COMMON ACCESS EASEMENT FOR LOT A-2 AND PARKING GARAGE, AND PRIVATE STORMWATER MANAGEMENT ACCESS & UTILITY EASEMENT TO LOT A-2, 0.2150 ACRES. PLAT NO. 23703 DATE 2-11-16

PRIVATE STORMWATER MANAGEMENT FACILITY, ACCESS & UTILITY EASEMENT; 0.3220 ACRES. PLAT NO. 23703 DATE 3-11-16

SITE & GRADING PLAN
SCALE: 1" = 30'

GRAPHIC SCALE
30' 0 10' 30' 60'
(IN FEET)
SCALE: 1" = 30'

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

KCI TECHNOLOGIES — Engineers, Planners, Surveyors, Construction Managers
936 Ridgebrook Road, Sparks, MD 21152
Phone (410)316-2900, Fax (410)316-2903
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK 26 / FOLIO 47
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BOWEN — No. 031089 — PROFESSIONAL ENGINEER

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
SITE PLAN

DRAWING NO.
C3.00
SHEET: 4 OF 27

SCALE:	1" = 30'
DATE:	JANUARY 15, 2016
PROJECT NO:	27146550

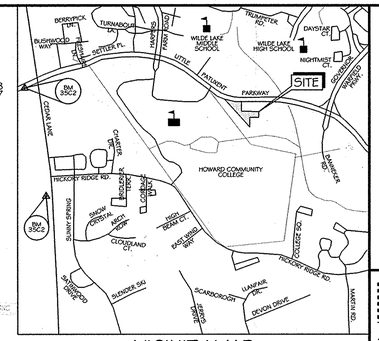
DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

BENCHMARK DATA

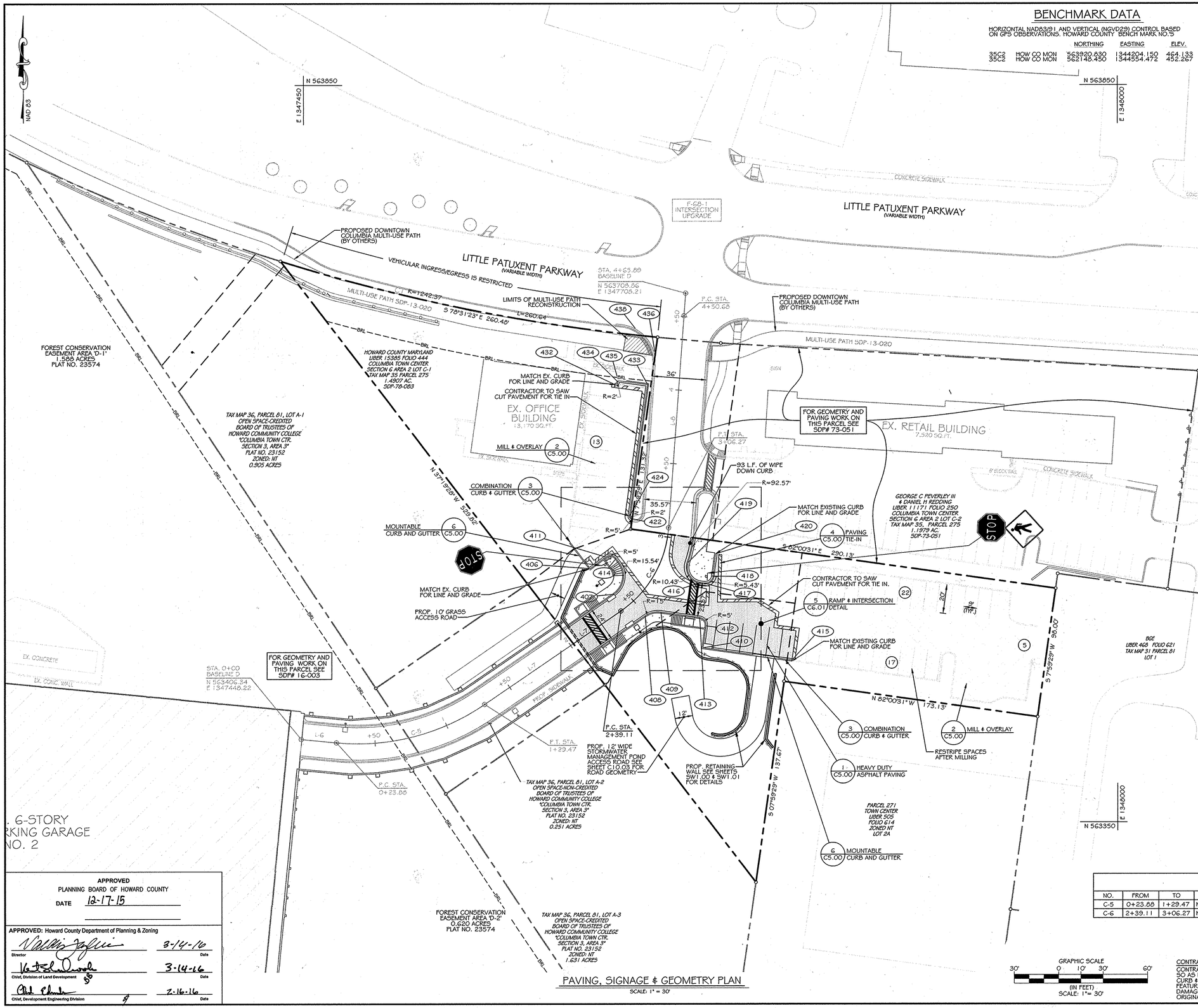
HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562148.450	1344554.472	452.267



VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6



PAVING, SIGNAGE & GEOMETRY PLAN

SCALE: 1" = 30'

LEGEND

- EX. LIGHT POLE
- EX. SIGN
- EX. FENCE
- PROP. CURB & GUTTER
- PROP. FENCE
- PROP. SIGN
- PROP. LIGHT POLE
- APPROXIMATE LIMITS OF HEAVY DUTY PAVING
- APPROXIMATE LIMITS OF CONCRETE
- APPROXIMATE LIMITS OF 2" MILL AND OVERLAY
- SAW CUT EX. PAVEMENT AND TIE IN TO PAVEMENT

BASELINE 'D'

NO.	STATION	OFFSET
406	2+38.32	35.45' LT
407	2+42.25	11.94' LT
408	2+49.06	12.77' RT
409	2+56.72	18.51' RT
410	2+57.33	55.86' RT
411	2+61.96	34.08' LT
412	2+64.96	48.20' RT
413	2+66.31	41.47' RT
414	2+67.58	27.82' LT
415	2+71.07	109.57' RT
416	2+80.52	30.36' RT
417	2+80.98	32.69' RT
418	2+85.49	36.66' RT
419	2+87.84	17.57' RT
420	2+95.71	33.98' RT
422	3+10.81	26.28' LT
424	3+12.45	26.96' LT
432	4+00.67	43.38' LT
433	4+02.24	21.25' LT
434	4+02.54	41.27' LT
435	4+03.51	41.21' LT
436	4+24.86	18.00' LT
438	4+39.85	32.39' LT

BASELINE 'D' DATA

NO.	STATION	NORTHING	EASTING	BEARING	LENGTH
L-6	0+00	563406.34	1347448.22	S 84° 21'42" E	23.94'
L-7	1+29.47	563429.93	1347572.14	N 55° 28'21" E	118.11'
L-8	3+06.27	563549.63	1347696.56	N 4° 11'7" E	159.65'

CURVE DATA

NO.	FROM	TO	Δ	RADIUS	TANGENT	LENGTH	CHORD BEARING & LENGTH
C-5	0+23.86	1+29.47	N 49°56'17" E	151.00'	55.05'	105.58'	N 75°30'13" E 103.44'
C-6	2+39.11	3+06.27	N 38°45'47" E	75.07'	36.00'	67.13'	N 29°49'44" E 64.92'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16

Chief, Division of Land Development — Date 3-14-16

Chief, Development Engineering Division — Date 2-16-16

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

CONTRACTOR NOTE:
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DESMAN ASSOCIATES

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ENGINEERS
PLANNERS
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10272 Baltimore Boulevard
Jessup, MD 21075
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PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: 11171, FOLIO: 247
TOWN CENTER: 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BUSH — No. 031089 — PROFESSIONAL ENGINEER — 12-16-15

NO.	DESCRIPTION	DATE
	ISSUE	

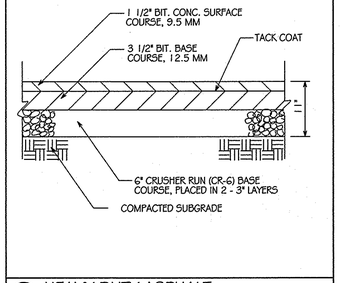
DRAWING TITLE:
PAVING, SIGNAGE & GEOMETRY PLAN

DRAWING NO.
C4.00
SHEET: 5 OF 27

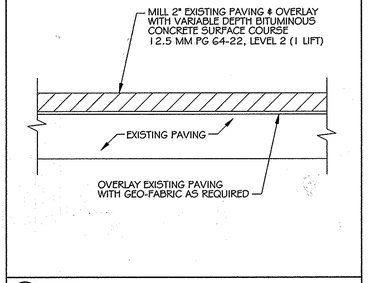
SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

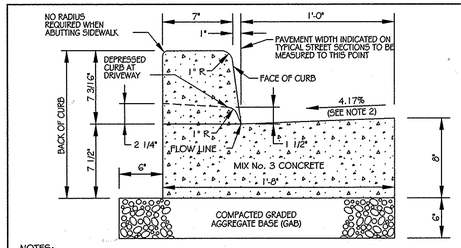
SDP 78-83



(1) HEAVY DUTY ASPHALT PAVING DETAIL SCALE: N.T.S.



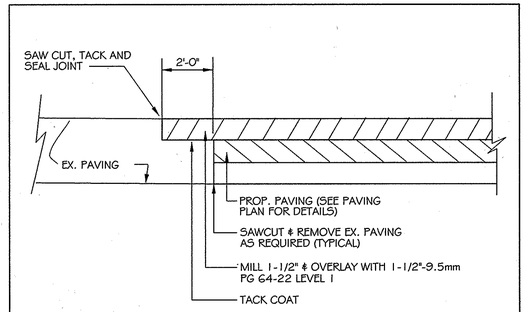
(2) MILL & OVERLAY SCALE: N.T.S.



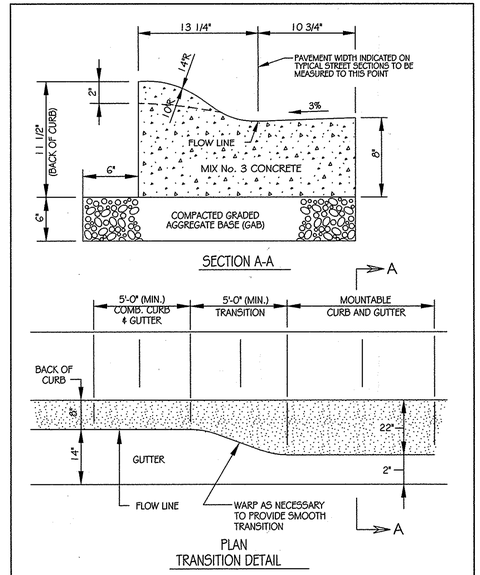
NOTES:

1. A REVERSE GUTTER PAN SHALL HAVE A GUTTER SLOPE OF 4.17% AWAY FROM THE FLOW LINE, AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.
2. GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPER ELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT CROSS-SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPER ELEVATED SECTION AND THE RATE OF SUPER ELEVATION IS GREATER THAN 3% FOR MODIFIED CURB & GUTTER.
3. A MINIMUM OF TWO FEET OF STABILIZED EARTH, SHALL SUPPORT ENTIRE BACK OF CURB.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER & FLOW LINE.

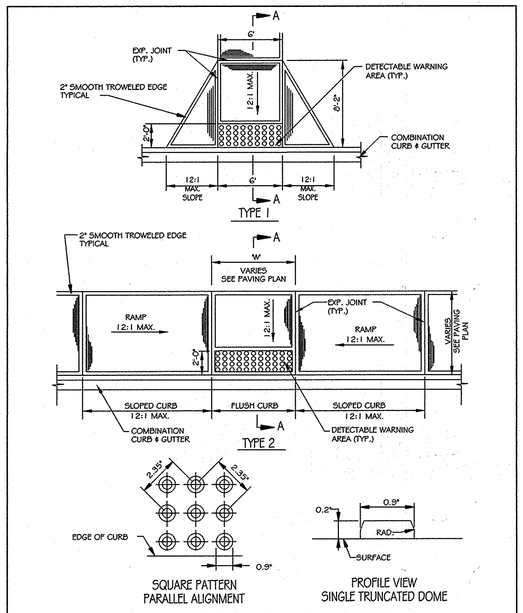
(3) COMBINATION CURB AND GUTTER SCALE: N.T.S.



(4) PAVING TIE-IN DETAIL SCALE: N.T.S.



(6) MOUNTABLE CURB AND GUTTER SCALE: N.T.S.

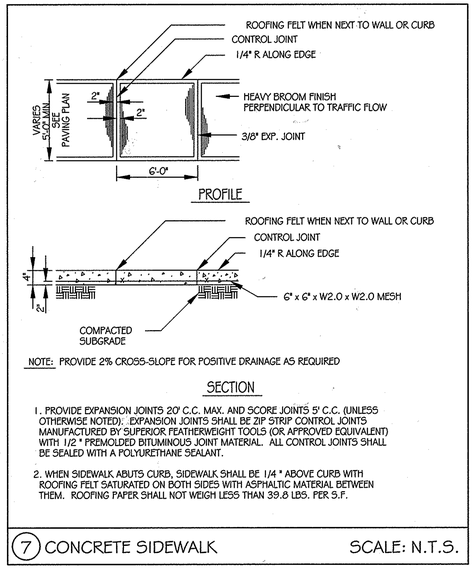


DETECTABLE WARNING DETAIL

NOTES:

1. SURFACE TEXTURE OF RAMPS SHALL BE COARSE BROOMING OR NON SKID SURFACE.
2. DETECTABLE WARNINGS SHALL BE SQUARE PATTERN, PARALLEL ALIGNMENT.
3. SEE DEPRESSED CURB AND GUTTER AT PEDESTRIAN RAMP DETAIL 9 FOR SECTION A-A.
4. SEE PAVING PLAN, SHEET C4.00, FOR TYPE 1 RAMP TAPERED CURB LENGTHS.
5. A DETECTABLE WARNING IS A STANDARDIZED SURFACE FEATURE BUILT IN OR APPLIED TO WALKING SURFACES (OR OTHER ELEMENTS) TO WARN VISUALLY IMPAIRED PEOPLE OF HAZARDS ON A CIRCULATION PATH.
6. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH NOMINAL DIMENSIONS AS SHOWN AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-DARK OR DARK-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE INTEGRAL WITH THE WALKING SURFACE.
7. DETECTABLE WARNING AREAS SHALL EXTEND 24" BACK FROM THE REAR OF THE CURB WITHIN THE RAMP ITSELF. THEY SHALL NOT BE USED ELSEWHERE ON A PEDESTRIAN RAMP.
8. DETECTABLE WARNINGS MAY BE APPLIED USING BRICK OR BLOCK PAVERS OR EXTRUDED TINTED CONCRETE.
9. PAVERS MAY BE SPLAYED AS REQUIRED TO MATCH A CURVED CURB RADIUS.
10. COMMERCIAL PRODUCTS MAY VARY IN SPACING, DIMENSION AND CONFIGURATION OF DOMES. CERTIFICATION OF COMPLIANCE WITH CURRENT A.D.A.A.G. (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINE REQUIREMENTS) SHALL BE REQUIRED OF ALL PRODUCTS BEFORE INSTALLATION.
11. MANUFACTURED PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

(5) PEDESTRIAN RAMPS SCALE: N.T.S.

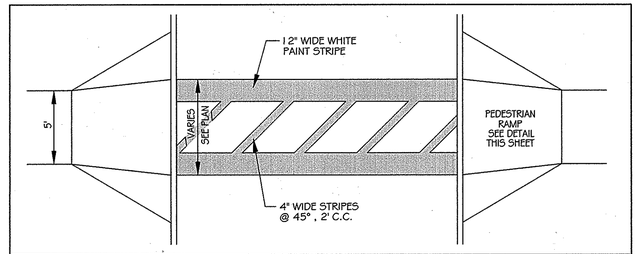


NOTE: PROVIDE 2% CROSS-SLOPE FOR POSITIVE DRAINAGE AS REQUIRED

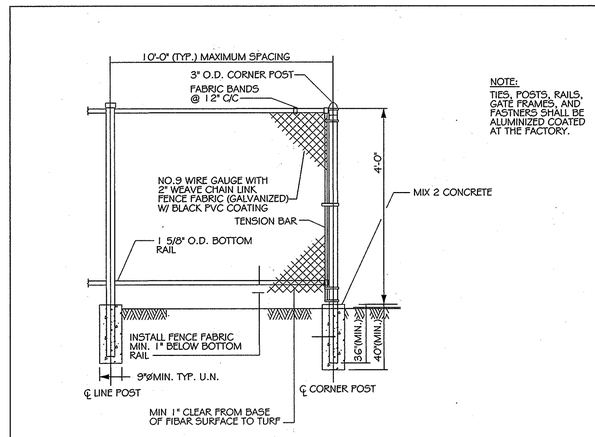
SECTION

1. PROVIDE EXPANSION JOINTS 20' C.C. MAX. AND SCORE JOINTS 5' C.C. (UNLESS OTHERWISE NOTED). EXPANSION JOINTS SHALL BE ZIP STRIP CONTROL JOINTS MANUFACTURED BY SUPERIOR FEATHERWEIGHT TOOLS (OR APPROVED EQUIVALENT) WITH 1/2" PREMOLDED BITUMINOUS JOINT MATERIAL. ALL CONTROL JOINTS SHALL BE SEALED WITH A POLYURETHANE SEALANT.
2. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH ROOFING FELT SATURATED ON BOTH SIDES WITH ASPHALTIC MATERIAL BETWEEN THEM. ROOFING PAPER SHALL NOT WEIGH LESS THAN 39.8 LBS. PER S.F.

(7) CONCRETE SIDEWALK SCALE: N.T.S.



(8) CROSSWALK PAINT STRIPING SCALE: N.T.S.



(9) 4' HIGH CHAIN LINK FENCE SCALE: N.T.S.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-15-17

APPROVED: Howard County Department of Planning & Zoning

Director	3-14-16 Date
Chief, Division of Land Development	3-14-16 Date
Chief, Development Engineering Division	2-16-16 Date

DESMAN ASSOCIATES

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STATE OF MARYLAND — RICHARD L. BLAKE — NO. 031089 — PROFESSIONAL ENGINEER — 1/15/16

ISSUE

NO.	DESCRIPTION	DATE

DRAWING TITLE: SITE DETAILS

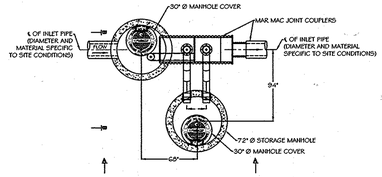
DRAWING NO. C5.00
SHEET: 6 OF 27

SCALE: N.T.S.
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

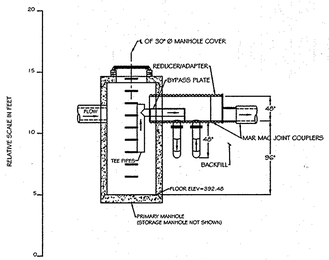
DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

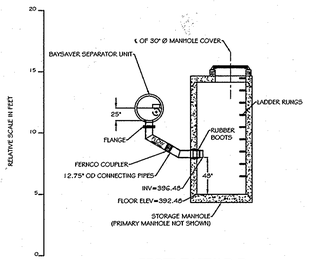
SDP 78-83



PLAN VIEW-BAYSAVER SEPARATION SYSTEM
(RIGHT HAND ORIENTATION SHOWN)



PROFILE VIEW A-A



PROFILE VIEW B-B

INLET PIPE INVERT:	400.92 / 401.18
INLET PIPE ID AND MATERIAL:	18" RCCP / 15" RCCP
OUTLET PIPE INVERT:	400.72
OUTLET PIPE ID AND MATERIAL:	24" RCCP
PRIMARY MANHOLE RIM ELEVATION:	406.95
STORAGE MANHOLE RIM ELEVATION:	406.90
ORIENTATION (RIGHT OR LEFT):	RIGHT

GENERAL NOTES:

1. MANHOLES SHOWN REPRESENT STANDARD PRECAST STRUCTURES PROVIDED BY OTHERS.
2. SEAL THE CONNECTING PIPES INTO THE STORAGE MANHOLE USING RUBBER BOOTS/GASKETS.
3. THE BAYSAVER SEPARATION SYSTEM INCLUDES THE SEPARATOR UNIT, (2) CONNECTING PIPES, (2) FERNCO COUPLERS, (1) REDUCER ADAPTER, AND (2) MARMAC JOINT COUPLERS.
4. LEFT HAND ORIENTATION SHOWN. FOR RIGHT HAND ORIENTATION ROTATE STORAGE MANHOLE AND CONNECTING PIPES 180°.
5. SEE BAYSAVER SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR FURTHER DETAIL.
6. USE NON-SHRINK GROUT TO SEAL THE INLET PIPE AND BAYSEPARATOR IN TO THE PRIMARY MANHOLE.
7. BACKFILL: CLASS I, II OR III BACKFILL SHOULD BE USED TO AN ELEVATION OF AT LEAST 6" OVER THE CROWN OF THE SEPARATOR UNIT.
8. 12" COVER REQUIRED FOR TRAFFIC RATED SURFACE.
9. BAYSEPARATOR IS PROTECTED BY US PATENT NO. 5,746,911

REV	DESCRIPTION	DATE	APPR

NOTES:

BAYSAVER TECHNOLOGIES
800-829-7283
WWW.BAYSAVER.COM

DESIGNED:	TEP	DATE:	08/01/15
DRAWN:	EKH	SCALE:	N.T.S.
CHECKED:	EKH	DWG NO:	5K

5K BAYSEPARATOR™
GENERAL SYSTEM DETAILS

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BAYSAVER WATER QUALITY DEVICE

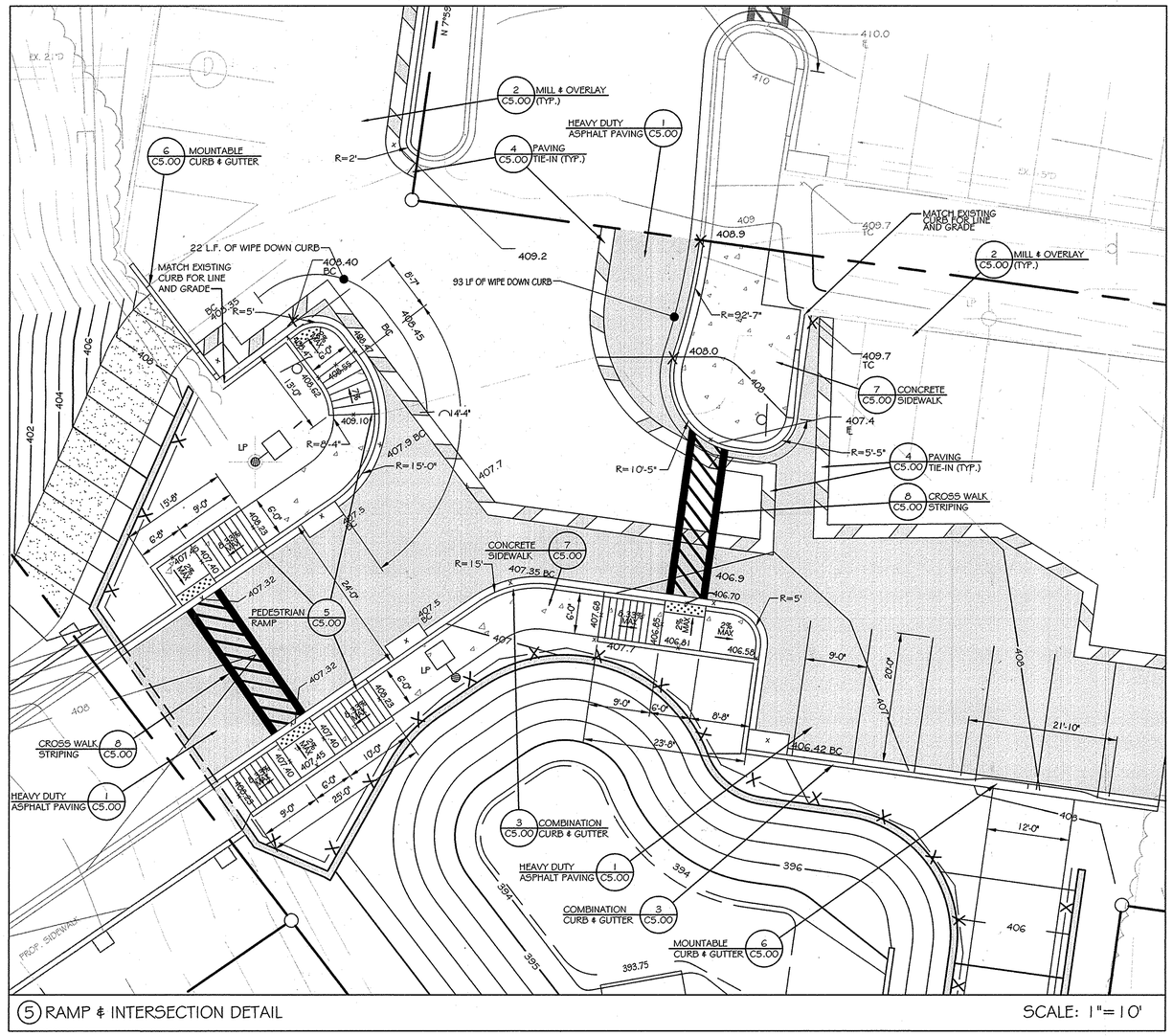
A. THE BAYSAVER WATER QUALITY STRUCTURE SHALL BE PERIODICALLY INSPECTED AND CLEANED TO MAINTAIN OPERATION AND FUNCTION. THE OWNER SHALL INSPECT THE BAYSAVER UNIT YEARLY AT A MINIMUM, UTILIZING THE BAYSAVER INSPECTION/MONITORING FORM. INSPECTIONS SHALL BE DONE BY USING A GRADE STICK OR SIMILAR DEVICE. WHEN THE SEDIMENT DEPTHS EXCEED 2 FEET, THE UNIT MUST BE CLEANED.

B. THE BAYSAVER WATER QUALITY STRUCTURE SHALL BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES.

C. THE MAINTENANCE OF THE BAYSAVER UNIT SHALL BE DONE USING A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIAL IN THE UNIT. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.

D. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX MONTHS. IF OBSTRUCTIONS ARE FOUND THE OWNER SHALL HAVE THEM REMOVED. STRUCTURAL PARTS OF THE BAYSAVER UNIT SHALL BE REPAIRED AS NEEDED.

E. THE OWNER SHALL RETAIN AND MAKE THE BAYSAVER INSPECTION/MONITORING FORMS AVAILABLE THE HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.



(5) RAMP & INTERSECTION DETAIL — SCALE: 1"=10'

LEGEND

- EX. LIGHT POLE
- EX. SIGN
- EX. FENCE
- PROP. CURB & GUTTER
- PROP. FENCE
- PROP. SIGN
- PROP. LIGHT POLE
- APPROXIMATE LIMITS OF HEAVY DUTY PAVING
- APPROXIMATE LIMITS OF CONCRETE
- APPROXIMATE LIMITS OF GRASS ACCESS ROADS
- APPROXIMATE LIMITS OF 2" MILL AND OVERLAY
- SAW CUT EX. PAVEMENT AND TIE IN TO PAVEMENT

GRAPHIC SCALE
10' 0 5' 10' 20'
(IN FEET)
SCALE: 1"= 10'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16

Chief, Division of Land Development — Date 3-14-16

Chief, Development Engineering Division — Date 2.16.16

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

NAD 83

DESMAN ASSOCIATES

KCI TECHNOLOGIES
Engineers
Planners
Scientists
Construction Managers
936 Ridgebrook Road
Sparks, Maryland 21152
Phone (410)316-2800
Fax (410)316-2820
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK 26 / FOLIO 47
TOWN CENTER: 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BLOOM — NO. 031089 — PROFESSIONAL ENGINEER
1-15-16

ISSUE

NO.	DESCRIPTION	DATE

DRAWING TITLE:
SITE DETAILS

DRAWING NO.
C5.01
SHEET: 7 OF 27

SCALE:	AS SHOWN
DATE:	JANUARY 15, 2016
PROJECT NO:	27146550

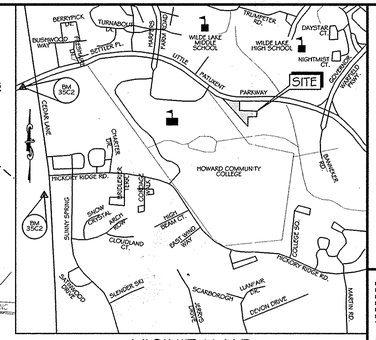
DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562140.450	1344564.472	452.267



VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6

LEGEND

PROPERTY LINE	
450	EX. INDEX CONTOUR
451	EX. INTERMEDIATE CONTOUR
	EX. LIGHT POLE
X X	EX. FENCE
EX. 15" DRAIN	EX. STORM DRAIN
EX. GAS	EX. GAS LINE
EX. 6" SANITARY	EX. SANITARY
EX. ELECTRIC	EX. ELECTRIC
EX. TELEPHONE	EX. TELEPHONE
EX. CABLE TV	EX. CABLE TV
EX. 8" WATER	EX. WATER
GP1	SOILS LINE
LOD	LIMIT OF DISTURBANCE
400	PROP. CONTOUR
408.00x	PROP. SPOT ELEVATION
E E	PROP. ELECTRIC
G G	PROP. GAS
12" DRAIN	PROP. STORM DRAIN
	PROP. MANHOLE
	PROP. INLET

UTILITY NOTES

1. CONSTRUCTION OF THE PROPOSED UTILITIES WILL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE, BY A QUALIFIED CONTRACTOR.
2. NO WORK IS TO COMMENCE UNTIL ALL PERMITS HAVE BEEN OBTAINED.
3. EXISTING CURB AND GUTTER AND CONCRETE SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT. NO PATCHING SHALL BE PERMITTED.
4. ALL NON-PAVED DISTURBED AREAS WILL BE STABILIZED WITH 4" TOPSOIL, SEED AND MULCH UNLESS OTHERWISE NOTED.
5. ALL CONSTRUCTION SHALL FOLLOW LATEST HOWARD COUNTY DEPT. OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS OF CONSTRUCTION OR AS DETAILED ON THE DRAWINGS.
6. GRAVEL CRADLE IS REQUIRED UNDER ALL PIPE.
7. ALL BACKFILL SHALL BE MECHANICALLY TAMPED.
8. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK SHOWN ON THESE DRAWINGS UNLESS OTHERWISE NOTED.
9. ALL CHANNELS IN MANHOLES MUST BE CONSTRUCTED TO CONFORM AS CLOSE AS POSSIBLE TO THE STANDARD CHANNELS CALLED FOR IN THE PROFILES.
10. FOR UTILITY WORK OUTSIDE THE LOD SHOWN ON THIS PLAN, CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE) THE TRENCH.
11. PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
12. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.
13. SEE SHEET C5.00 FOR WATER & STORM DRAIN PROFILES AND SCHEDULES.
14. CONTRACTOR TO COORDINATE WITH VERIZON FOR THE REMOVAL AND/OR RELOCATION OF EXISTING TELEPHONE LINE.
15. ROADWAY LIGHTS MUST REMAIN IN SERVICE DURING THE DURATION OF THE PROJECT.
16. SEE ELEC. PLANS FOR NOTES & DETAILS.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director	3-14-16 Date
Chief, Division of Land Development	3-14-16 Date
Chief, Development Engineering Division	2.16.16 Date

UTILITY PLAN

SCALE: 1" = 30'

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET)
SCALE: 1"= 30'

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
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Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

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Fax: (410) 316-7905
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD

PARCEL: 275 TAX MAP: 35 GRID: 6
PLAT: 23152 BLOCK: 47
TOWN CENTER LOT: C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089
EXPIRATION DATE: 11/21/16

STATE OF MARYLAND · RICHARD L. BLAKE · No. 031089 · PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE
	ISSUE	

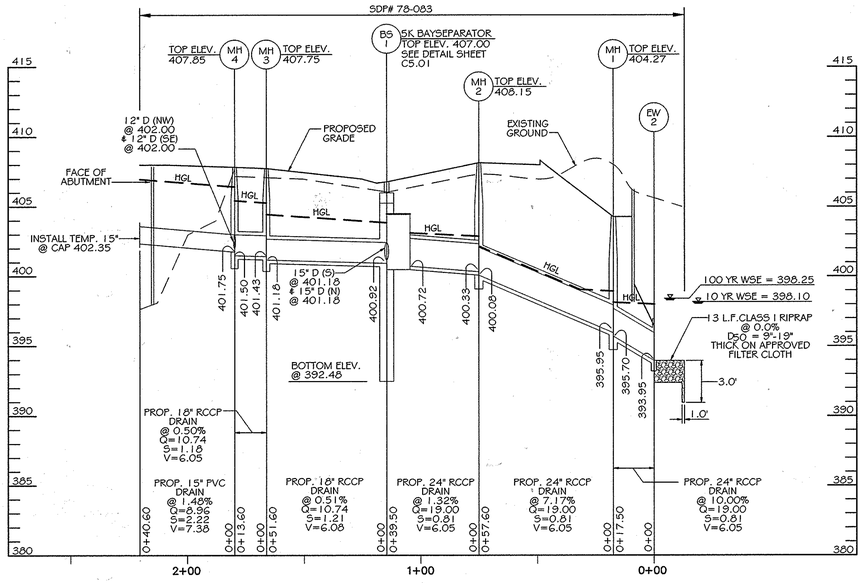
DRAWING TITLE:
UTILITY PLAN

DRAWING NO.
C6.00
SHEET: 8 OF 27

SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

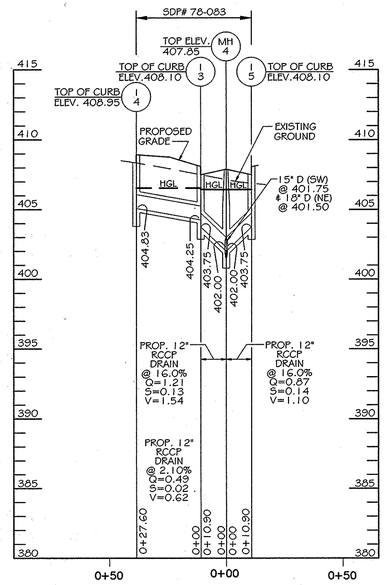
DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83



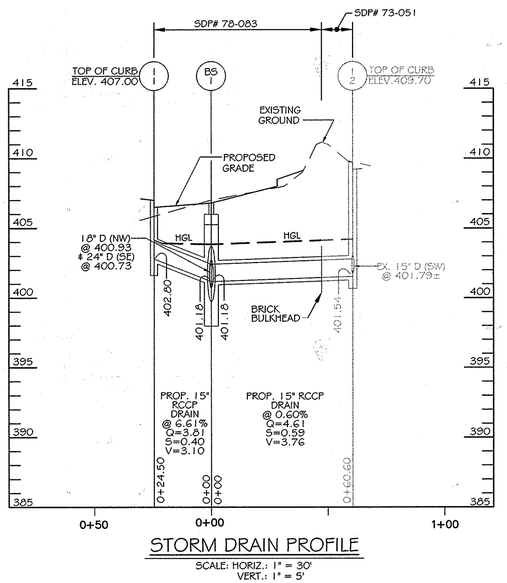
STORM DRAIN PROFILE

SCALE: HORIZ.: 1" = 30'
VERT.: 1" = 5'



STORM DRAIN PROFILE

SCALE: HORIZ.: 1" = 30'
VERT.: 1" = 5'



STORM DRAIN PROFILE

SCALE: HORIZ.: 1" = 30'
VERT.: 1" = 5'

STORMWATER FACILITY PIPE SCHEDULE

SIZE	MATERIAL	LENGTH
6"	PVC	57 L.F.
24"	RCCP CL IV (ASTM C-631)	82 L.F.

STORM DRAIN PIPE SCHEDULE

SIZE	MATERIAL	LENGTH
15"	PVC (SDR-35)	41 L.F.
12"	RCCP CL IV	50 L.F.
15"	RCCP CL IV	75 L.F.
18"	RCCP CL IV	66 L.F.
24"	RCCP CL IV	115 L.F.

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	SIZE IN.	ELEV. IN	SIZE OUT	ELEV. OUT	TOP ELEV.	REFERENCES / HOWARD COUNTY STD. DETAIL	NORTHING	EASTING
MH-1	48" STD. PRECAST MANHOLE	24"	395.95	24"	395.70	404.27	G-5.12	N 563,431.11	E 1,347,757.40
MH-2	48" STD. PRECAST MANHOLE	24"	400.33	24"	400.08	408.15	G-5.12	N 563,488.17	E 1,347,765.41
MH-3	48" STD. PRECAST MANHOLE	18"	401.43	18"	401.18	407.75	G-5.12	N 563,500.83	E 1,347,675.19
MH-4	48" STD. PRECAST MANHOLE	12"/12"/15"	402.0/402.0/401.75	18"	401.50	407.85	G-5.12	N 563,493.10	E 1,347,664.05
I-1	DBL. WR PRECAST INLET	-	-	15"	402.80	406.92 TC	D-4.35	N 563,467.91	E 1,347,722.68
I-3	DBL. WR PRECAST INLET	12"	404.25	12"	403.75	408.10 TC	D-4.35	N 563,503.00	E 1,347,657.18
I-4	TYPE 'S' COMB. INLET	-	-	12"	404.83	408.95 TC	D-4.32	N 563,524.46	E 1,347,641.72
I-5	DBL. WR PRECAST INLET	-	-	12"	403.75	408.10 TC	D-4.35	N 563,483.11	E 1,347,670.66
EW-1	TYPE 'C' ENDWALL	24"	-		393.95	-	D-5.21	N 563,408.22	E 1,347,605.60
EW-2	TYPE 'C' ENDWALL	24"	-		391.50	-	D-5.21	N 563,433.54	E 1,347,740.09
BS-1	BAYSAVER SWM STRUCTURE	15"/15"/18"	401.18/401.18/400.92	24"	400.72	407.00	SEE DETAIL SHEET C-5.01	N 563,493.66	E 1,347,726.30
S-1	CONCRETE RISER	6"	392.00	24"	392.00	397.50	SEE DETAIL SHEET C-10.05	N 563,449.38	E 1,347,675.37

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16

Chief, Division of Land Development — Date 3-14-16

Chief, Development Engineering Division — Date 2.16.16

CONTRACTOR NOTE:
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3430 Court House Drive
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ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

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Fax (410)316-7855
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LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, BOX 36, LOT: 6
PLAT: 27, BOX: 20, FOLIO: 47
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND · RICHARD L. BUSH · No. 031089 · PROFESSIONAL ENGINEER

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
UTILITY PROFILES

DRAWING NO.
C7.00
SHEET: 9 OF 27

SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

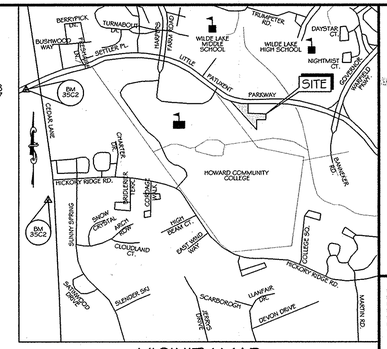
DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

BENCHMARK DATA

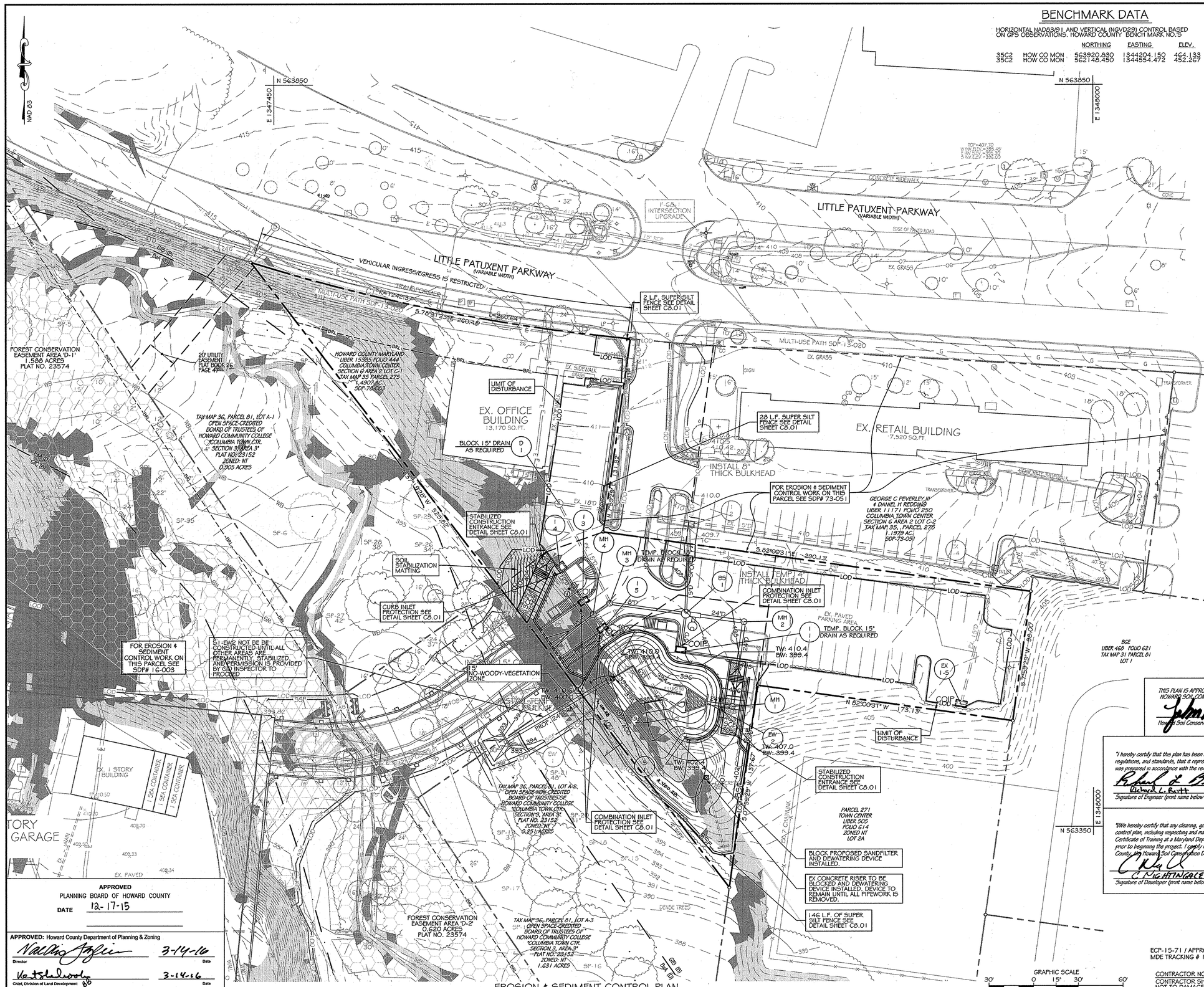
HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562148.450	1344854.472	452.267



VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6



LEGEND

- WB — 25' WETLAND BUFFER
- SB — 75' STREAM BUFFER
- WLBS — WATERS OF THE U.S.
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- APPROXIMATE LIMITS OF AREA WHERE SLOPE GRADE ≥25%
- APPROXIMATE LIMITS OF AREA WHERE SLOPE GRADE ≥15% AND <25%
- COIP — COMBINATION INLET PROTECTION
- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- SCE — STABILIZED CONSTRUCTION ENTRANCE

NOTE:
PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION SHALL BE INSTALLED IN ALL SENSITIVE AREAS LOCATED WITHIN THE LIMIT OF DISTURBANCE.

THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION, AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

Howard Soil Conservation District — Date 2/9/16

ENGINEER 'S CERTIFICATE

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation Distrct."

Richard L. Butt — Date 1-28-16
Signature of Engineer (print name below signature)

DEVELOPER 'S CERTIFICATE

"We hereby certify that any cleaning, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation Distrct and/or MDE."

C C NIGHTINGALE — Date 1-28-2016
Signature of Developer (print name below signature)

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16
Chief, Division of Land Development — Date 3-14-16
Chief, Development Engineering Division — Date 2-16-16

TOTAL AREA OF SITE = 1.49 ACRES
LIMIT OF DISTURBANCE (SDP 78-083) = 0.86 ACRES

EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 30'

SEQUENCE OF CONSTRUCTION LOCATED ON SHEET C8.01

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET)
SCALE: 1" = 30'

ECP-15-71 / APPROVED: AUG. 10, 2015
MDE TRACKING # 15-NT-3191 / MDE PERMIT # 2015-61-055

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

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LITTLE PATUXENT PARKWAY
COLUMBIA, MD
GREMPLER REALTY INC. OFFICE BUILDING

PARCEL: 275 TAX MAP: 35, GRID: 6
PLAT: 1,4907 AC. BLOCK: 47
TOWN CENTER: 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
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STATE OF MARYLAND — RICHARD L. BUTT — No. 031089 — PROFESSIONAL ENGINEER — 1-15-16

NO.	DESCRIPTION	DATE
	ISSUE	

DRAWING TITLE:
EROSION AND SEDIMENT CONTROL PLAN

DRAWING NO.
C8.00
SHEET: 10 OF 27

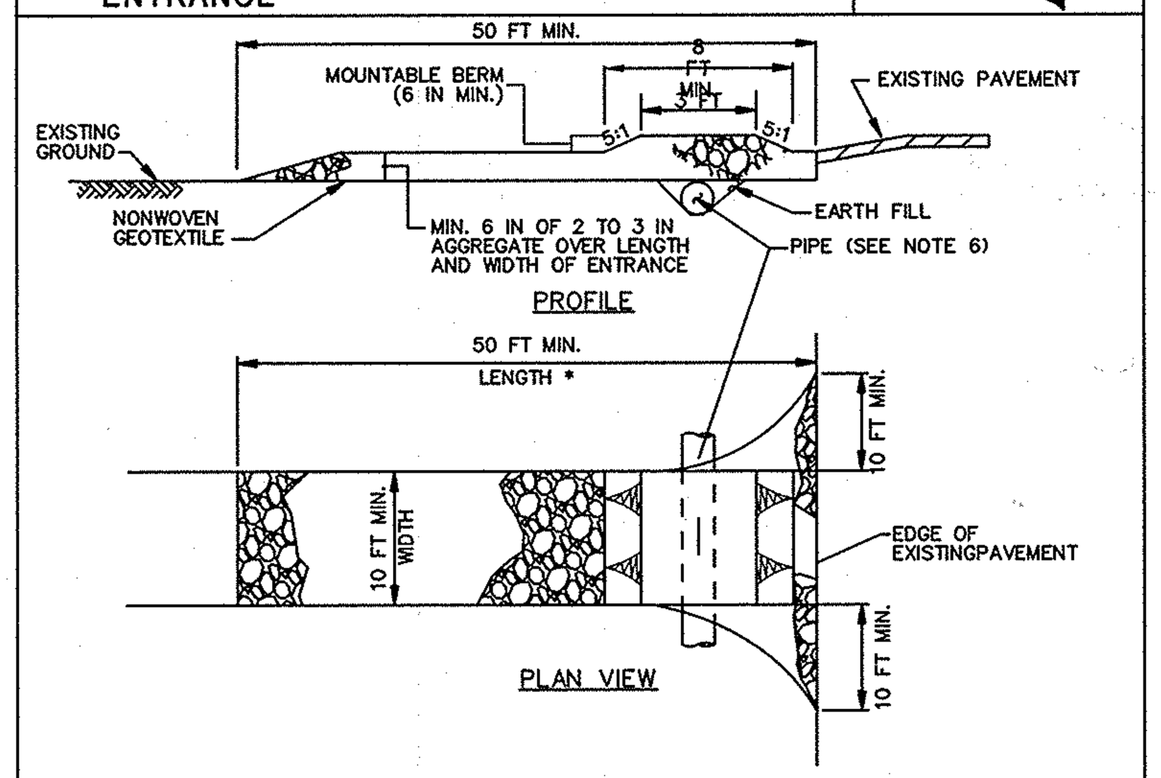
SCALE: 1" = 30'
DATE: DECEMBER 18, 2015
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



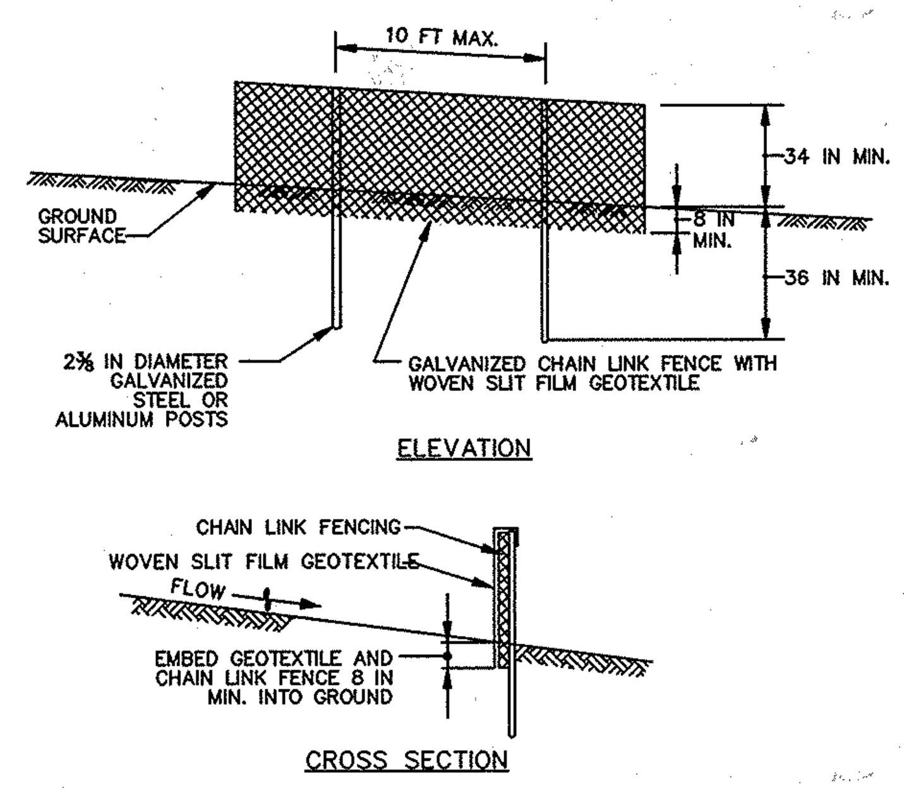
CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



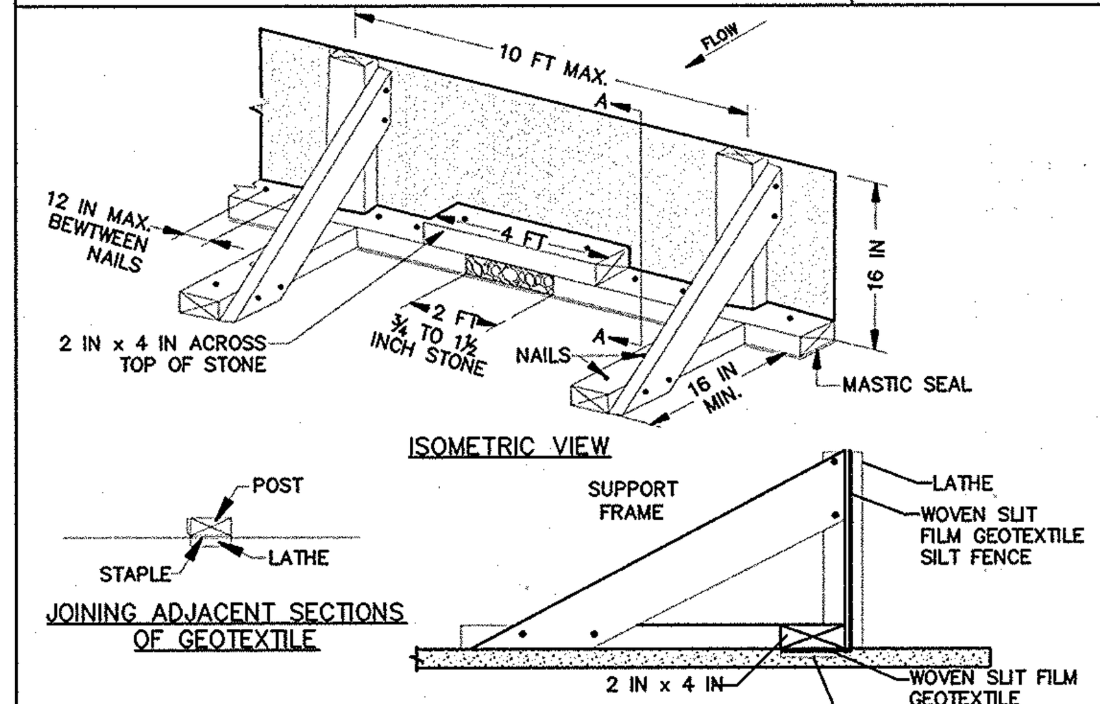
CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-2 SILT FENCE ON PAVEMENT

STANDARD SYMBOL: SFOP



CONSTRUCTION SPECIFICATIONS

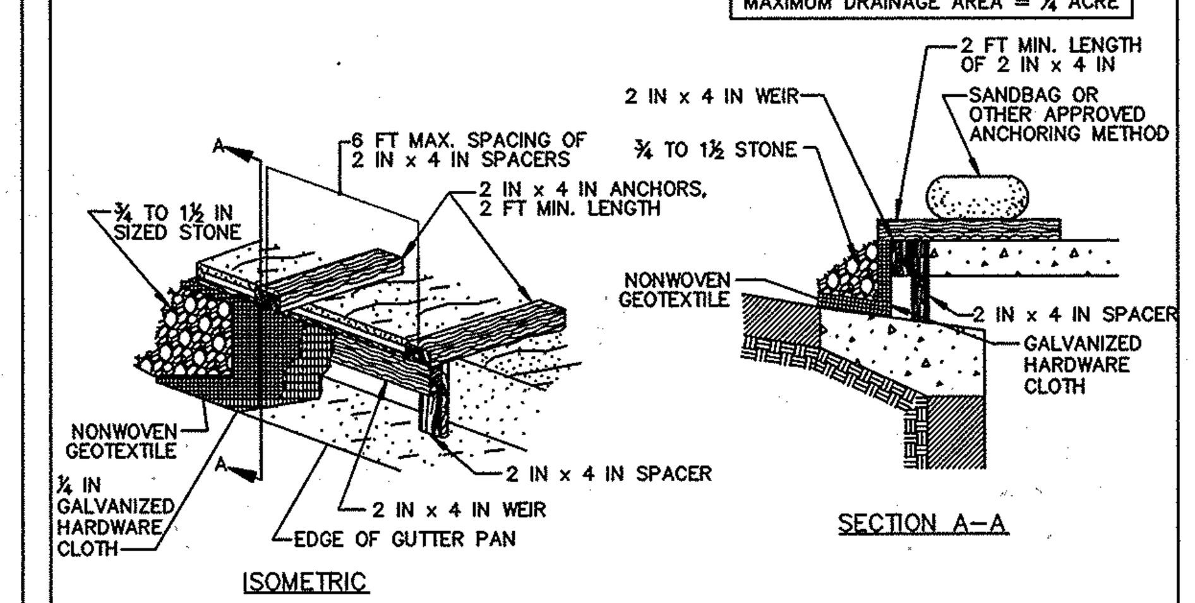
1. USE NOMINAL 2 INCH X 4 INCH LUMBER.
2. USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
3. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
4. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
5. PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
6. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
7. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
8. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
9. SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.
10. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



CONSTRUCTION SPECIFICATIONS

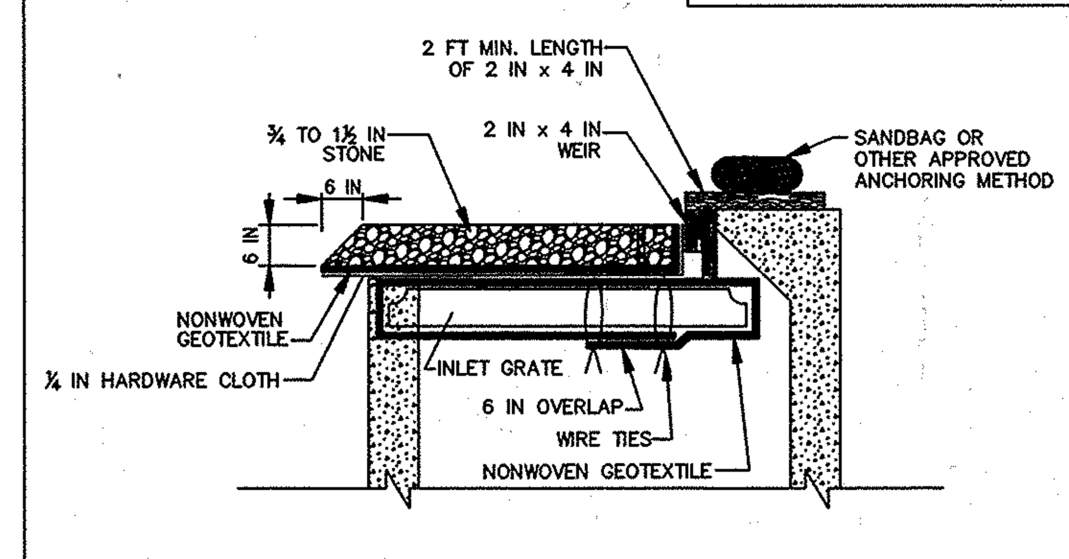
1. USE NOMINAL 2 INCH x 4 INCH LUMBER.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

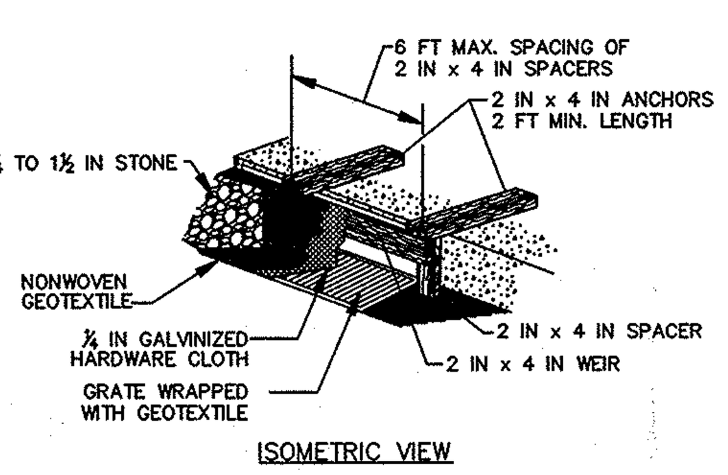
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

MAXIMUM DRAINAGE AREA = ¼ ACRE





1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

CONSTRUCTION SPECIFICATIONS

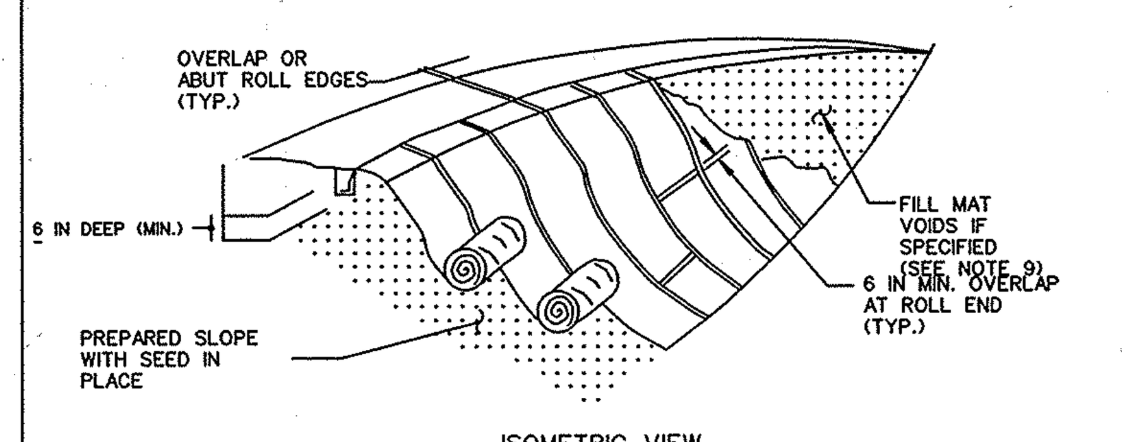
1. USE NOMINAL 2 INCH x 4 INCH LUMBER.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE.
4. ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR.
6. NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).
7. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
8. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING.
9. FORM THE ¼ INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
10. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
11. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: PSSMS – 2.0* lb/ft² (* INCLUDE SHEAR STRESS)



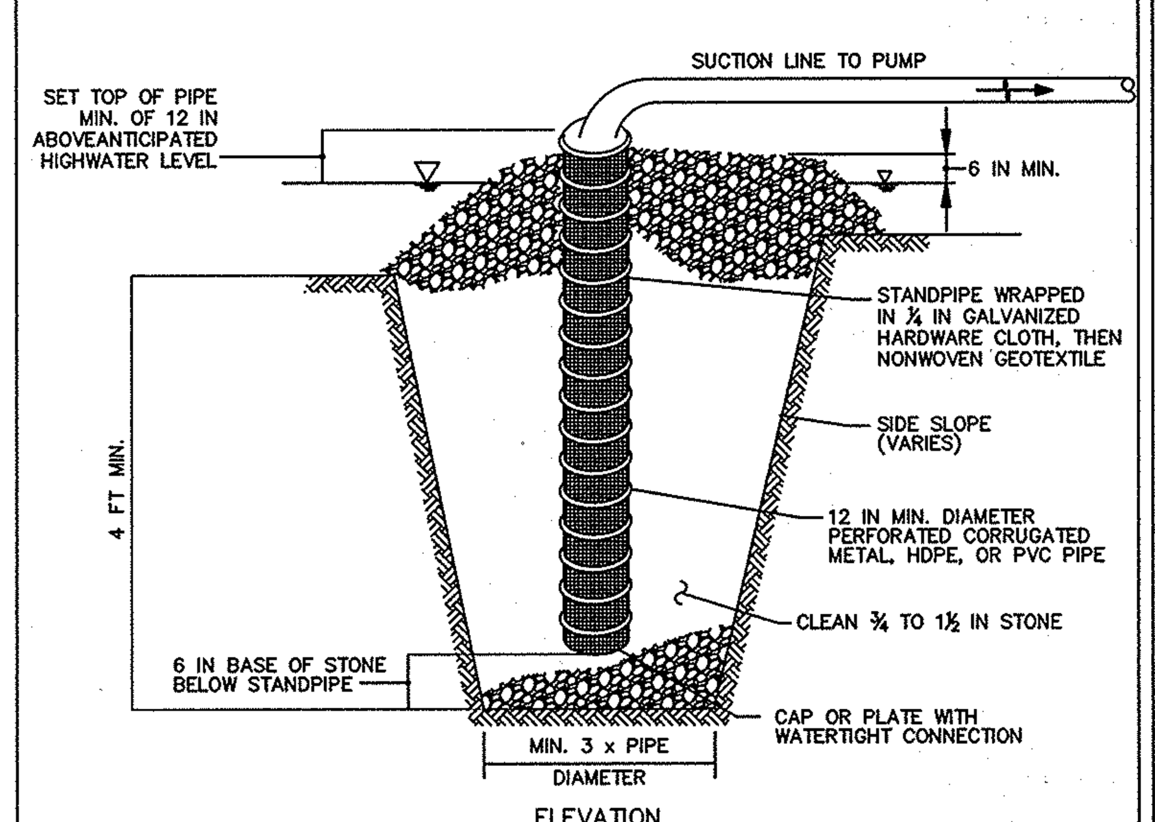
CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-2 SUMP PIT

STANDARD SYMBOL: SP



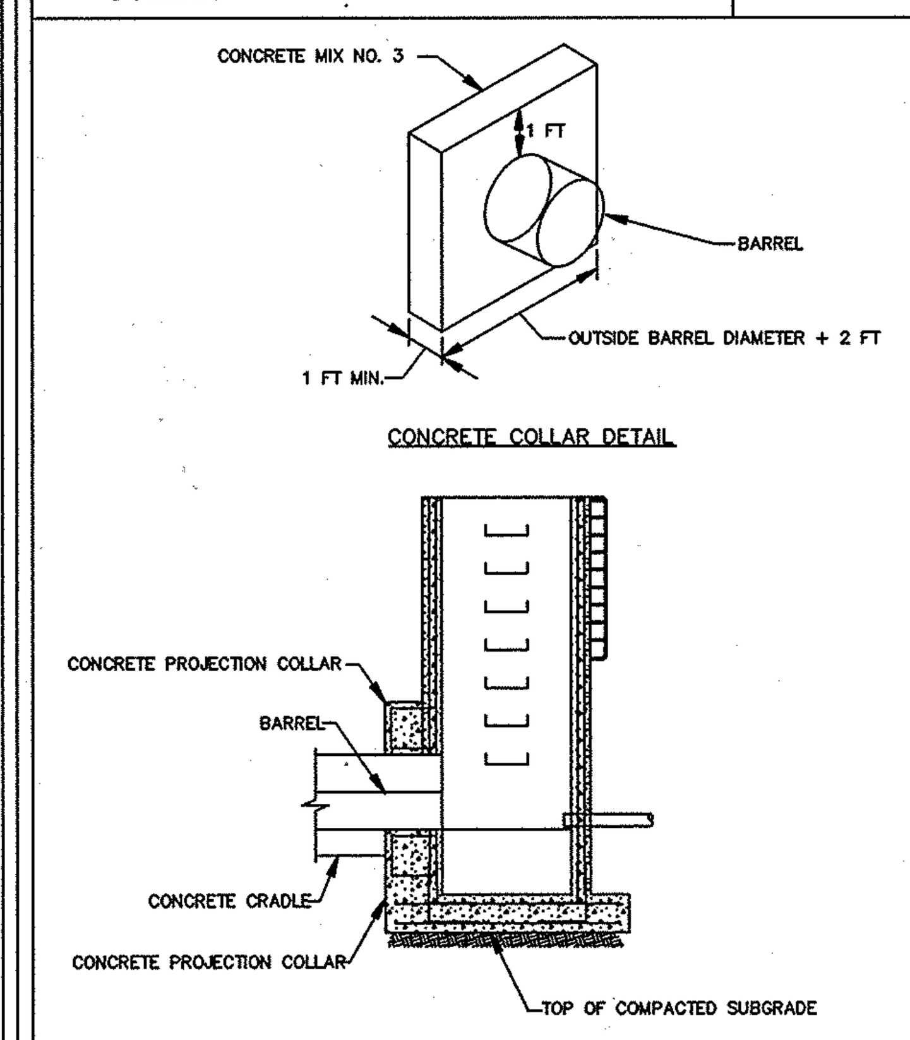
CONSTRUCTION SPECIFICATIONS

1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-2-9 PROJECTION COLLAR

STANDARD SYMBOL



CONSTRUCTION SPECIFICATIONS

1. CAST 1 FOOT THICK CONCRETE COLLAR TO OUTLET STRUCTURE WITH FOUR #4 U–SHAPED REBARS.
2. MAXIMUM BARREL STUB IS 2'–0".

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

2 WEEKS 1. OBTAIN GRADING PERMIT. CONTACT THE HOWARD COUNTY CID INSPECTOR AT 410-313-2433 A MINIMUM OF 2 WEEKS PRIOR TO THE START OF CONSTRUCTION TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE CONTRACTOR IS TO SUBMIT A SCHEDULE OF WORK ACTIVITIES TO THE DEPARTMENT OF PUBLIC WORKS PRIOR TO INITIATION OF ANY GRADING ACTIVITIES. (MDE#15 NT-3191/2015 61 055)

2 DAYS 2. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT LOCATIONS SHOWN AND INSTALL INLET PROTECTION WHERE SPECIFIED FOR INLET EX I-5. BLOCK 15" PIPE AT DIVERSION MANHOLE D-1.

2 DAYS 3. INSTALL THE PERIMETER SEDIMENT CONTROL DEVICES SUPER SILT FENCE AT LOCATIONS SHOWN ON SHEET C8.00. MAKE SURE ALL NECESSARY SEDIMENT CONTROLS ARE IN PLACE PRIOR TO STRIPPING THE TOPSOIL.

7 DAYS 4. INSTALL STORM DRAIN FROM EW-2 THROUGH I-4 PROVIDE INLET PROTECTION, TEMP. BULKHEADS, TEMP. CAP AND TEMP. OUTFLOW BLOCKING AT I-1 AND MH-3 AS SHOWN ON PLAN.

NOTES:
A. SURFACE SANDFILTER FACILITY #2 SHALL NOT BE INSTALLED UNTIL ALL OF THE UPSTREAM DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
B. PERMISSION MUST BE OBTAIN FROM HOWARD COUNTY CID INSPECTOR PRIOR TO STRIPPING TOPSOIL.

8 DAYS 5. STRIP THE TOPSOIL, REMOVE EXISTING PAVING, CURB & GUTTER AND OTHER EXISTING SURFACE FEATURES NEEDED TO INSTALL PROPOSED PARKING LOT AS SPECIFIED ON SHEET C8.00 OR AS DIRECTED BY OWNER.

5 DAYS 6. STRIP THE REMAINING TOPSOIL AND ROUGH GRADE SITE AS SHOWN ON EROSION & SEDIMENT CONTROL PLAN (C8.00) TO BRING SITE TO SUBGRADE WITHIN LIMITS OF DISTURBANCE.

10 DAYS 7. INSTALL CURB AND GUTTER, SIDEWALKS AND BASE COURSE FOR PAVED AREAS.

14 DAYS 8. CONCURRENTLY BEGIN EXISTING PARKING LOT RESURFACING AND CURB REPAIR OR NEW CURB AND GUTTER INSTALLATION.

12 MONTHS 9. UPON COMPLETION OF PARKING LOT INSTALLATION AND REPAIRS PERMANENTLY STABILIZE ALL DISTURBED AREAS WITH SEED & MULCH.

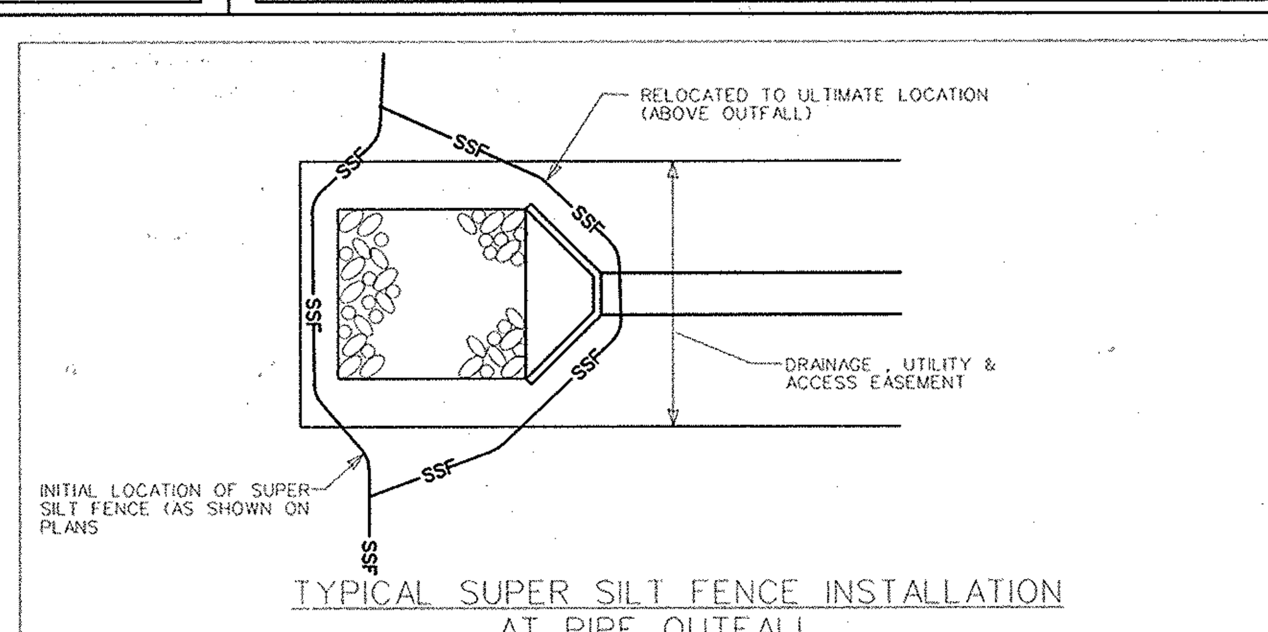
2 DAYS 10. INSTALL ANY REMAINING CURB AND GUTTER AND SURFACE COURSE FOR PAVED AREAS

10 DAYS 11. INSTALL SAND SURFACE FACILITIES AND STABILIZE ALL DISTURBED AREAS AS NECESSARY.

10 DAYS 12. INSTALL SITE LANDSCAPING, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS WITH TOPSOIL, SEED & MULCH.

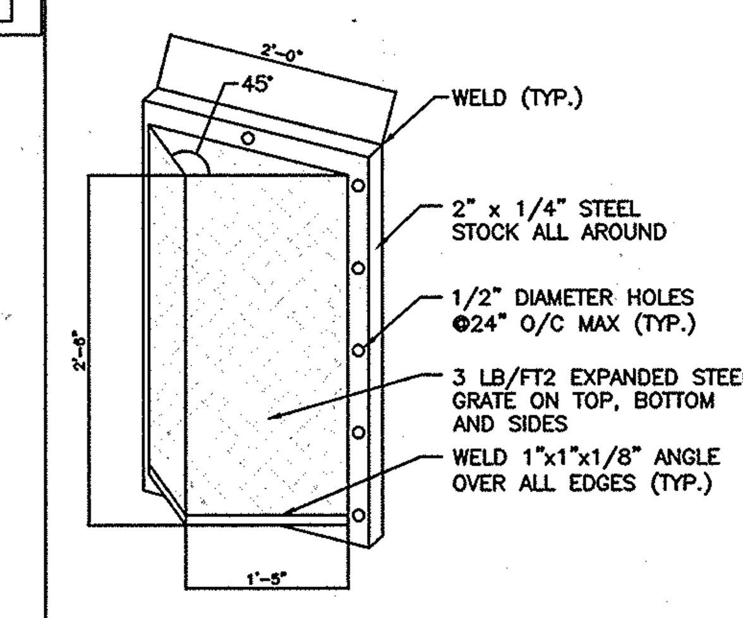
NOTE:
OUTFALL PIPE FROM SURFACE SAND FILTER FACILITY #2 SHOWN ON SHEET C8.00 (SDP 16-003) SHALL BE INSTALLED PRIOR TO REMOVING TEMP. BULKHEAD, CAP & OUTFLOW BLOCKING ON SHEET C8.00 (SDP 78-83).

14 DAYS 13. UPON APPROVAL FROM THE HOWARD COUNTY CID INSPECTOR, REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES. REPAIR CURB & GUTTER AND PAVING AS REQUIRED AFTER REMOVAL OF SEDIMENT CONTROL MEASURES. STABILIZE ALL AREAS DISTURBED DURING REMOVAL OF SEDIMENT CONTROL DEVICES. PROVIDE COPY OF HSCD LETTER OF APPROVAL FOR POND AS-BUILT TO INSPECTOR. ANY AND ALL REMOVAL OF THESE DEVICES MUST HAVE PRIOR APPROVAL FROM THE CID INSPECTOR.



TYPICAL SUPER SILT FENCE INSTALLATION AT PIPE OUTFALL

SUPER SILT FENCE OUTFALL PROTECTION DETAIL



TRASH RACK — SCALE: N.T.S.

NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFIRM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Signature	Date
Director	3-14-16
Chief, Division of Land Development	3-14-16
Chief, Development Engineering Division	2.16.16

THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION, AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District — Date 2/9/16

ENGINEER 'S CERTIFICATE

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Richard L. Butt — Date 1-28-16
Signature of Engineer (print name below signature)

DEVELOPER 'S CERTIFICATE

"We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

C NIGHTINGALE — Date 1-28-2016
Signature of Developer (print name below signature)

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
936 Ridgebrook Road
Sparks, MD 21152
Phone (410)316-7800
Fax (410)316-7853
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK 26 / FOLIO 47
TOWN CENTER 6/2, LOT C–1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BUTT — No. 031089 — PROFESSIONAL ENGINEER — 1-15-16

ISSUE

NO.	DESCRIPTION	DATE

DRAWING TITLE: EROSION & SEDIMENT CONTROL DETAILS

DRAWING NO. C8.01

SHEET: 11 OF 27

SCALE: N.T.S.

DATE: JANUARY 15, 2016

PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

B-1 STANDARDS AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ENTRANCE

DEFINITION

A LAYER OF AGGREGATE THAT IS UNDERLAIN WITH NONWOVEN GEOTEXTILE AT POINTS OF INGRESS AND EGRESS OF THE CONSTRUCTION SITE.

PURPOSE

TO REDUCE TRACKING OF SEDIMENT ONTO ROADWAYS AND PROVIDE A STABLE AREA FOR ENTRANCE TO OR EXIT FROM THE CONSTRUCTION SITE.

CONDITIONS WHERE PRACTICE APPLIES

STABILIZED CONSTRUCTION ENTRANCES MUST BE LOCATED AT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS.

DESIGN CRITERIA

1. WHERE POSSIBLE, LOCATE THE STABILIZED CONSTRUCTION ENTRANCES AT THE HIGH SIDE OF THE PROJECT AREA.
2. FOR SINGLE FAMILY RESIDENTIAL LOTS, LOCATE THE ENTRANCE AT THE PERMANENT DRIVEWAY.
3. STABILIZED CONSTRUCTION ENTRANCES CANNOT BE INSTALLED OVER PAVEMENT.
4. MINIMUM LENGTH IS 50 FEET (30 FEET FOR SINGLE FAMILY RESIDENTIAL LOTS).
5. MINIMUM WIDTH IS 10 FEET. FLARE ENTRANCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
6. THE ORIENTATION OF THE STABILIZED CONSTRUCTION ENTRANCE MAY VARY FROM A STRAIGHT LINE TO A CURVE OR "T" SHAPE DEPENDING ON THE TOPOGRAPHY AND RIGHT-OF-WAY.
7. ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE STABILIZED CONSTRUCTION ENTRANCE (SCE) MUST BE PIPED UNDER THE ENTRANCE. SIZE THE PIPE TO CONVEY THE RUNOFF GENERATED BY THE 2-YEAR, 24-HOUR FREQUENCY STORM AT MINIMUM. THE MINIMUM PERMISSIBLE PIPE SIZE IS 6 INCHES. WHEN THE ENTRANCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY.

MAINTENANCE

THE SCE MUST BE MAINTAINED IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. THIS MAY REQUIRE ADDING STONE OR MAKING OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN A CLEAN SURFACE, THE MOUNTABLE BERM, AND THE SPECIFIED DIMENSIONS. ALL STONE OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO THE ADJACENT ROADWAY MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING THE ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS THE WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPERATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

I. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.

b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — 3-14-16 Date

Chief, Division of Land Development — 3-14-16 Date

Chief, Development Engineering Division — 2-16-16 Date

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPERATION, TOPSOILING, AND SOIL AMENDMENTS (CONTINUED)

6. TOPSOIL APPLICATION

a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

A. SEEDING

1. SPECIFICATIONS

a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P_2O_5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K_2O (POTASSIUM), 200 POUNDS PER ACRE.

II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90

2. APPLICATION

a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

B.1 TEMPORARY SEEDING RATES, DEPTHS, AND DATES

PLANT SPECIES	SEEDING RATE LB/AC	SEEDING RATE LB/1000 FT²	SEEDING DEPTH (INCHES)	SEEDING RATE 6B
COOL-SEASON GRASSES				
ANNUAL RYEGRASS (*LOLIUM PERENNE SSP. MULTIFORM*)	40	1.0	0.5	MAR 1 TO MAY 15; AUG 1 TO OCT 15
BARLEY (*HORDEUM VULGARE*)	96	2.2	1.0	MAR 1 TO MAY 15; AUG 1 TO OCT 15
OATS (*AVENA SATIVA*)	72	1.7	1.0	MAR 1 TO MAY 15; AUG 1 TO OCT 15
WHEAT (*TRITICUM AESTIVUM*)	120	2.8	1.0	MAR 1 TO MAY 15; AUG 1 TO OCT 15
CEREAL RYE (*SECALE CEREALE*)	112	2.8	1.0	MAR 1 TO MAY 15; AUG 1 TO OCT 15
WARM-SEASON GRASSES				
FOXTAIL MILLET (*SETARIA ITALICA*)	30	0.7	0.5	MAY 16 TO JUL 31
PEARL MILLET (*PENNISETUM GLAUCUM*)	20	0.5	0.5	MAY 16 TO JUL 31

NOTES:

1/ SEEDING RATES FOR WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENT ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.

SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDING, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT. FOR - SMALLER - SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN THE VERY LATE FALL BEYOND THE SEEDING DATE FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS IF IT MUST BE USED AS NURSE CROP, SEED AS 1/3 OF THE RATE LISTED ABOVE.

OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.

2/ FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.

3/ THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENTS TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

A. SEED MIXTURES

1. GENERAL USE

a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.

c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 ½ POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND"

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)

CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)

SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

HARDINESS ZONE (from figure B.3): 6b SEED MIXTURE (from table B.1):					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P_2O	K_2O	
	KENTUCKY BLUEGRASS 10% TURF-TYPE TALL FESCUE 40% GRADE TALL FESCUE 30% PERENNIAL RYEGRASS 20%	250	3/15 - 5/15 OR 8/15 - 11/15	1/4 - 1/2 in.	45 POUNDS PER ACRE (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/1000 sf)
	KENTUCKY BLUEGRASS 10% TURF-TYPE TALL FESCUE 40% GRADE TALL FESCUE 30% PERENNIAL RYEGRASS 20%	350	3/15 - 5/15 OR 8/15 - 11/15	1/4 - 1/2 in.				

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾ INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION (CONTINUED)

2. SOD INSTALLATION

a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ˙ OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

B-4-6 STANDARDS AND SPECIFICATIONS FOR SOIL STABILIZATION MATTING

DEFINITION

MATERIAL USED TO TEMPORARILY OR PERMANENTLY STABILIZE CHANNELS OR STEEP SLOPES UNTIL GROUNDCOVER IS ESTABLISHED.

PURPOSE

TO PROTECT THE SOILS UNTIL VEGETATION IS ESTABLISHED.

CONDITIONS WHERE PRACTICE APPLIES

ON NEWLY SEEDED SURFACES TO PREVENT THE APPLIED SEED FROM WASHING OUT; IN CHANNELS AND ON STEEP SLOPES WHERE THE FLOW HAS EROSIVE VELOCITIES OR CONVEYS CLEAR WATER; ON TEMPORARY SWALES, EARTH DIKES, AND PERIMETER DIKE SWALES AS REQUIRED BY THE RESPECTIVE DESIGN STANDARD; AND, ON STREAM BANKS WHERE MOVING WATER IS LIKELY TO WASH OUT NEW VEGETATIVE PLANTINGS.

DESIGN CRITERIA

1. THE SOIL STABILIZATION MATTING THAT IS USED MUST WITHSTAND THE FLOW VELOCITIES AND SHEAR STRESSES DETERMINED FOR THE AREA, BASED ON THE 2-YEAR, 24-HOUR FREQUENCY STORM FOR TEMPORARY APPLICATIONS AND THE 10-YEAR, 24-HOUR FREQUENCY STORM FOR PERMANENT APPLICATIONS. DESIGNATE ON THE PLAN THE TYPE OF SOIL STABILIZATION MATTING USING THE STANDARD SYMBOL AND INCLUDE THE CALCULATED SHEAR STRESS FOR THE RESPECTIVE TREATMENT AREA.

2. MATTING IS REQUIRED ON PERMANENT CHANNELS WHERE THE RUNOFF VELOCITY EXCEEDS TWO AND HALF FEET PER SECOND (2.5 FPS) OR THE SHEAR STRESS EXCEEDS TWO POUNDS PER SQUARE FOOT (2 LBS/FT²). ON TEMPORARY CHANNELS DISCHARGING TO A SEDIMENT TRAPPING PRACTICE, PROVIDE MATTING WHERE THE RUNOFF VELOCITY EXCEEDS FOUR FEET PER SECOND (4 FPS).

3. TEMPORARY SOIL STABILIZATION MATTING IS MADE WITH DEGRADABLE (LASTS 6 MONTHS MINIMUM), NATURAL, OR MANMADE FIBERS OF UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND IS SMOLDER RESISTANT. THE MAXIMUM PERMISSIBLE VELOCITY FOR TEMPORARY MATTING IS 6 FEET PER SECOND.

4. PERMANENT SOIL STABILIZATION MATTING IS AN OPEN WEAVE, SYNTHETIC MATERIAL CONSISTING OF NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION OF WEAVE THROUGHOUT. THE MAXIMUM PERMISSIBLE VELOCITY FOR PERMANENT MATTING IS 8.5 FEET PER SECOND.

5. CALCULATE CHANNEL VELOCITY AND SHEAR STRESS USING THE FOLLOWING PROCEDURE:

SHEAR STRESS (T) IS A MEASURE OF THE FORCE OF MOVING WATER AGAINST THE SUBSTRATE AND IS CALCULATED AS:

T=(y)(R)(Sw) WHERE:

T=SHEAR STRESS (lb/ft²)
y=WEIGHT DENSITY OF WATER (62.4 lb/ft³)
R=AVERAGE WATER DEPTH (HYDRAULIC RADIUS)(ft)
Sw=WATER SURFACE SLOPE (ft/ft)

VELOCITY (v) MEASURES THE RATE OF FLOW THROUGH A DEFINED AREA AND IS CALCULATED AS:

WHERE:

v=VELOCITY (ft/sec)
n=MANNING'S ROUGHNESS COEFFICIENT
R=HYDRAULIC RADIUS (ft)
s=CHANNEL SLOPE (ft/ft)

6. USE TABLE B.7 TO ASSIST IN SELECTING THE APPROPRIATE SOIL STABILIZATION MATTING FOR SLOPE APPLICATIONS BASED ON THE SLOPE, THE SLOPE LENGTH, AND THE SOIL-ERODIBILITY K FACTOR.

TABLE B.7: SOIL STABILIZATION ON SLOPES

SLOPE	20:1 OR FLATTER (<5%)			<20:1 TO 4:1 (>5-25%)			<4:1 TO 3:1 (>25-33%)			<3:1 TO 2.5:1 (>33-40%)			<2.5:1 TO 2:1** (>40-50%)		
SLOPE LENGTH (FEET*)	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120
STRAW MULCH/WOOD CELLULOSE FIBER				FOR K ≤ 0.35***											
TEMPORARY MATTING WITH DESIGN SHEAR STRESS > 1.5 lb/sf															
TEMPORARY MATTING WITH DESIGN SHEAR STRESS > 1.75 lb/sf															
TEMPORARY MATTING WITH DESIGN SHEAR STRESS > 2.0 lb/sf															
TEMPORARY MATTING WITH DESIGN SHEAR STRESS > 2.25 lb/sf															

[shaded] EFFECTIVE RANGE FOR ALL K VALUES UNLESS OTHERWISE SPECIFIED

* SLOPE LENGTH INCLUDES CONTRIBUTING FLOW LENGTH.
** SLOPES STEEPER THAN 2:1 MUST BE ENGINEERED.
*** SOIL HAVING A K VALUE LESS THAN OR EQUAL TO 0.35 CAN BE STABILIZED EFFECTIVELY WITH STRAW MULCH OR WOOD CELLULOSE FIBER WHEN LOCATED ON SLOPES STEEPER THAN 5%. SOIL STABILIZATION MATTING IS REQUIRED ON ALL SLOPES STEEPER THAN 5% THAT HAVE SOIL WITH A K FACTOR GREATER THAN 0.35. K FACTOR RATINGS ARE PUBLISHED IN THE NRCS SOIL SURVEY HTTP:// WEBSOILSURVEY.NRCS.USDA.GOV/APP. DURING CONSTRUCTION OR RECLAMATION, THE SOIL-ERODIBILITY K VALUE SHOULD REPRESENT THE UPPER 6 INCHES OF THE FINAL FILL MATERIAL RE-SPREAD AS THE LAST LIFT. ONLY THE EFFECTS OF ROCK FRAGMENTS WITHIN THE SOIL PROFILE ARE CONSIDERED IN THE ESTIMATION OF THE K VALUE. DO NOT ADJUST K VALUES TO ACCOUNT FOR ROCKS ON THE SOIL SURFACE OR INCREASES IN SOIL ORGANIC MATTER RELATED TO MANAGEMENT ACTIVITIES.

MAINTENANCE

VEGETATION MUST BE ESTABLISHED AND MAINTAINED SO THAT THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT

Howard Soil Conservation District — 2/9/16 Date

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Richard L. Butt — 1-28-16 Date
Signature of Engineer (print name below signature)

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to these plans for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

C. NIGHTINGALE — 1-28-2016 Date
Signature of Developer (print name below signature)

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

KCI TECHNOLOGIES
ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
936 Ridgebrook Road
Sparks, MD 21152
Phone (410)316-7800
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www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK 26 / FOLIO 47
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BUTT — No. 031089 — PROFESSIONAL ENGINEER — 1-15-16

ISSUE

NO.	DESCRIPTION	DATE

DRAWING TITLE: EROSION & SEDIMENT CONTROL NOTES

DRAWING NO. C8.02

SHEET: 12 OF 27

SCALE: N.T.S.

DATE: JANUARY 15, 2016

PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83
[redacted]

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

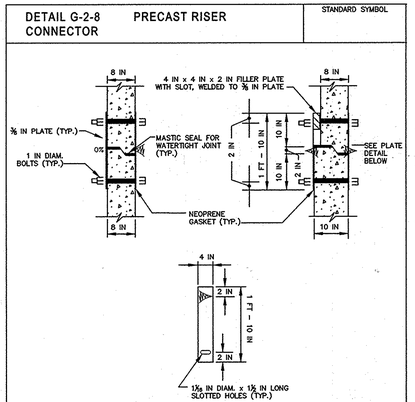
DESIGN CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
4. ACCESS TO THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

DETAIL G-2-8 CONNECTOR — PRECAST RISER — STANDARD SYMBOL



PLATE

CONSTRUCTION SPECIFICATIONS

1. FABRICATE PLATE CONNECTORS FROM STAINLESS STEEL CONFORMING TO ASTM A666-72, GRADE A OR B.
2. USE TYPE 304 STAINLESS STEEL FOR BOLTS.
3. PROVIDE CONNECTORS AT CENTERLINE OF EACH PRECAST BOX FACE. FOR MANHOLES PROVIDE FOUR PLATES SPACED AT 90°.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3/4/16

Chief, Division of Land Development — Date 3-14-16

Chief, Development Engineering Division — Date 2.16.16

H-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY ACCESS WATERWAY CROSSINGS

DEFINITION

A STRUCTURE PLACED ACROSS A WATERWAY TO PROVIDE ACCESS FOR CONSTRUCTION PURPOSES FOR A PERIOD OF LESS THAN ONE YEAR. TEMPORARY ACCESS CROSSINGS ARE NOT TO BE UTILIZED TO MAINTAIN TRAFFIC FOR THE GENERAL PUBLIC.

PURPOSE

TO PROVIDE SAFE, POLLUTION FREE ACCESS ACROSS A WATERWAY FOR CONSTRUCTION EQUIPMENT BY ESTABLISHING MINIMUM STANDARDS AND SPECIFICATIONS FOR THE DESIGN, CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE STRUCTURE. A TEMPORARY ACCESS WATERWAY CROSSING IS NECESSARY TO PREVENT CONS TRUCTION EQUIPMENT FROM DAMAGING THE WATERWAY, INCREASING FISH MIGRATION, AND TRACKING SEDIMENT AND OTHER POLLUTANTS INTO THE WATERWAY. A WATERWAY CROSSING MAY CREATE A CHANNEL CONSTRICTION, THUS THE TEMPORARY NATURE OF WATERWAY ACCESS CROSSINGS MUST BE STRESSED. THE CROSSING SHOULD BE IN PLACE FOR THE SHORTEST PRACTICAL PERIOD OF TIME AND REMOVED AS SOON AS ITS FUNCTION IS COMPLETED.

CONDITIONS WHERE PRACTICE APPLIES

TEMPORARY WATERWAY CROSSINGS MUST CONFORM TO THE TECHNICAL REQUIREMENTS OF THESE STANDARDS AND SPECIFICATIONS AS WELL AS ANY SPECIFIC REQUIREMENTS IMPOSED BY THE MDE WETLANDS AND WATERWAYS PROGRAM. THE DESIGNS ARE BASED ON WATERWAY GEOMETRY RATHER THAN THE DRAINAGE AREA CONTRIBUTING TO THE POINT OF CROSSING. THE PRINCIPAL CONSIDERATION OF THESE STANDARDS AND SPECIFICATIONS IS EROSION AND SEDIMENT CONTROL. STRUCTURAL INTEGRITY AND SAFETY FOR EXPECTED LOADING MUST ALSO BE CONSIDERED WHEN DESIGNING TEMPORARY ACCESS WATERWAY CROSSINGS. THE TWO TYPES OF STANDARD TEMPORARY WATERWAY CROSSINGS ARE BRIDGES AND CULVERTS. BRIDGES ARE PREFERABLE.

DESIGN CRITERIA

1. STREAM CLOSURES: THE STREAM CHANNEL MUST NOT BE DISTURBED DURING RESTRICTED TIME PERIODS. STREAM CLOSURE DATES FOR FISH SPAWNING OR MIGRATION WITHIN WATERWAYS ARE AS FOLLOWS:

USE I AND IP	MARCH 1 - JUNE 15
USE II	JUNE 1 - SEPTEMBER 30 AND DECEMBER 16 - MARCH 14
USE III AND IIIP	OCTOBER 1 - APRIL 30
USE IV	MARCH 1 - MAY 31
SAV*	APRIL 1 - OCTOBER 15

*SUBMERGED AQUATIC VEGETATION (SAV)

FOR MORE INFORMATION ABOUT THE CLOSURES BASED ON STREAM USES AND SAVS CONTACT MDE WETLANDS AND WATERWAYS PROGRAM.

2. AQUATIC MIGRATION: FISH PASSAGE MUST NOT BE OBSTRUCTED BY THE INSTALLATION OF A WATERWAY CROSSING. BRIDGES POSE THE LEAST POTENTIAL FOR CREATING BARRIERS TO AQUATIC MIGRATION. THE CONSTRUCTION OF A WATERWAY CROSSING MUST NOT CAUSE A SIGNIFICANT WATER LEVEL DIFFERENCE BETWEEN THE UPSTREAM AND DOWNSTREAM WATER SURFACE ELEVATIONS.
3. SITE LOCATION: LOCATE THE TEMPORARY CROSSING WHERE THERE WILL BE THE LEAST DISTURBANCE TO THE EXISTING WATERWAY BANKS AND APPROACHES. WHEN POSSIBLE, LOCATE THE CROSSING AT A POINT RECEIVING MINIMAL SURFACE RUNOFF. CONSIDER THE EFFORT THAT WILL BE REQUIRED TO RESTORE THE AREA AFTER THE TEMPORARY CROSSING IS REMOVED.
4. CROSSING ALIGNMENT: THE TEMPORARY WATERWAY CROSSING SHOULD BE AT RIGHT ANGLES TO THE STREAM, UNLESS THE APPROACH CONDITIONS INDICATE OTHERWISE.
5. APPROACHES: THE CENTERLINE OF BOTH APPROACHES NEEDS TO COINCIDE WITH THE CENTERLINE OF THE CROSSING FOR A MINIMUM DISTANCE OF 50 FEET FROM THE TOP OF EACH STREAM BANK, UNLESS PRECLUDED BY PHYSICAL OR RIGHT-OF-WAY CONSTRAINTS. THE APPROACHES SHOULD BE KEPT AS CLOSE TO THE EXISTING GRADE AS POSSIBLE. APPROACHES SHOULD HAVE A MINIMUM WIDTH OF 12 FEET AND A MAXIMUM WIDTH OF 20 FEET DEPENDING ON THE SIZE OF THE VEHICLES THAT WILL USE THE CROSSING.
6. SURFACE RUNOFF: RUNOFF ON THE APPROACHES MUST BE AT A NON-EROSIVE VELOCITY. THIS CAN BE ATTAINED THROUGH SURFACE STABILIZATION OR SURFACE RUNOFF DIVERSION. SURFACE RUNOFF FROM UNSTABILIZED APPROACHES MUST DISCHARGE TO AN APPROVED SEDIMENT CONTROL DEVICE.
7. REMOVAL: AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS UNLESS WITHIN THE USE DESIGNATION STREAM CLOSURE PERIOD.

MAINTENANCE

THE STONE CHECK DAM IS NOT A SEDIMENT TRAPPING PRACTICE; HOWEVER, SOME SEDIMENT MAY ACCUMULATE BEHIND THE CHECK DAM. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN IT REACHES ONE-HALF OF THE HEIGHT OF THE WEIR CREST. LINE, GRADE, AND CROSS SECTION MUST BE MAINTAINED.

CHECK DAM REMOVAL

IN TEMPORARY SWALES AND CHANNELS, REMOVE CHECK DAM(S) WHEN NO LONGER NEEDED. IN PERMANENT CHANNELS, CHECK DAMS MAY BE REMOVED WHEN PERMANENT LINING IS INSTALLED. IN THE CASE OF GRASS-LINED CHANNELS, CHECK DAM MAY BE REMOVED WHEN THE GRASS HAS MATURED SUFFICIENTLY TO PROTECT THE SWALE OR CHANNEL. SEED AND INSTALL SOIL STABILIZATION MATTING OR SOD IN THE AREAS DISTURBED BY THE REMOVAL OF THE CHECK DAM.

H-4-1 STANDARDS AND SPECIFICATIONS FOR TEMPORARY ACCESS BRIDGE

DEFINITION

A TEMPORARY WATERWAY CROSSING THAT SPANS THE STREAM CHANNEL.

DESIGN CONSIDERATION

GENERALLY, A TEMPORARY ACCESS BRIDGE CAUSES LESS DISTURBANCE TO THE WATERWAY BED AND BANKS AND POSES LESS INTERFERENCE WITH FISH MIGRATION THAN A CULVERT ACCESS CROSSING.TIME-OF-YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACCESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

MAINTENANCE

THE APPROACH TO THE BRIDGE MUST BE STABILIZED AND KEPT FREE OF EROSION. THE DECKING AND CURBS MUST BE CLEANED OF SEDIMENT DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. THE DECKING AND CURBS MUST REMAIN TIGHTLY BUTTED WITHOUT GAPS. DEBRIS TRAPPED BY THE BRIDGE MUST BE REMOVED. THE AREAS ADJACENT TO THE CROSSING MUST BE MAINTAINED TO CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, THE NONTIDAL WETLAND BUFFER, WATERS OF THE STATE AND THE 100-YEAR FLOODPLAIN

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER THAT DOES NOT ADVERSELY IMPACT SURFACE OR GROUNDWATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) AT 30 LBS/ACRE, HARD FESCUE (FESTUCA BROMOIDES) AT 45 LBS/ACRE, KENTUCKY 31 TALL FESCUE (FESTUCA ARUNDINACEA) AT 45 LBS/ACRE. THE FOLLOWING SPECIES MAY BE SUBSTITUTED OR ADDED TO THE SEED MIXTURE: BARLEY (HORDEUM SATIVUM) AT 96 LBS/ACRE, WEEPING LOVEGRASS (ERAGROSTIS CURVULA) AT 2 LBS/ACRE, OR SWITCHGRASS (PANICUM VIRGATUM) AT 10 LBS/ACRE. NO SOD OR SEED MIXTURES CONTAINING COMMON REED (PHRAGMITES AUSTRALIS) SHALL BE PLANTED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

   USE I WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
   A. PRIOR TO THE START OF EARTH DISTURBANCE.
   B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
   C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT, D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
   OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY HAS BEEN COMMUNICATED. STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH > 15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
6. SITE ANALYSIS:

TOTAL AREA OF SITE:	1.49 ACRES
AREA DISTURBED:	0.86 ACRES
AREA TO BE ROOFED OR PAVED:	0.58 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.28ACRES
TOTAL CUT:	820 CU. YDS.
TOTAL FILL:	280 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION:	SITE WITH APPROVED SED. CONTROL PLAN

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MEASURES MAY BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
   • INSPECTION DATE
   • INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
   • NAME AND TITLE OF INSPECTOR
   • WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
   • BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
   • EVIDENCE OF SEDIMENT DISCHARGES
   • IDENTIFICATION OF PLAN DEFICIENCIES
   • IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
   • IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
   • COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
   • PHOTOGRAPHS
   • MONITORING/SAMPLING
   • MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
   • OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
   • USE I AND IP MARCH 1 - JUNE 15
   • USE III AND IIIP OCTOBER 1 - APRIL 30
   • USE IV MARCH 1 - MAY 31
16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

1. DEVELOPER'S CERTIFICATION:

   I (WE) CERTIFY THAT:
   A) ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT BOARD OF SUPERVISORS OR THEIR AUTHORIZED AGENTS.
   B) ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENTS APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

   RESPONSIBLE PERSON ON THE SITE: _____
2. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS, AND/OR RIGHTS OF WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS OF WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS FOR THE SURFACE OF PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAT 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. THE SEDIMENT CONTROL APPROVALS ON THE PLAN EXTEND ONLY TO AREAS AND PRACTICES IDENTIFIED AS PROPOSED WORK.
5. THE APPROVAL OF THIS PLAN FOR SEDIMENT AND EROSION CONTROL DOES NOT RELIEVE THE DEVELOPER/CONSULTANT FROM COMPLYING WITH ANY FEDERAL/STATE/COUNTY REQUIREMENTS APPERTAINING TO ENVIRONMENTAL ISSUES.
6. THE DEVELOPER MUST REQUEST THE DEPARTMENT OF INSPECTIONS AND PERMITS APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE GRADING OR BUILDING PERMIT AND THE ORDINANCE.
7. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE DEPARTMENT OF INSPECTIONS AND PERMITS SHALL BE REQUIRED ON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE INITIAL APPROVAL BY THE DEPARTMENT OF INSPECTIONS AND PERMITS IS GIVEN.
8. APPROVAL SHALL BE REQUESTED ON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES BEFORE REMOVAL OF CONTROLS.

SIGNATURE OF DEVELOPER / APPLICANT — DATE: 1-28-2016

PRINT NAME: C.N. LIGHTINGALE — TITLE: EXEC DIR FAC & CAP PROJ

ADDRESS: 10461 Little Patuxent Pkwy., Columbia MD 21044

TELEPHONE:

THE DEVELOPER'S PLAN TO CONTROL SILT AND EROSION IS ADEQUATE TO CONTAIN THE SILT AND EROSION PROPERTY COVERED BY THE PLAN. I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THIS SITE, AND WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT PLAN SUBMITTAL GUIDELINES AND THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

SIGNATURE: Richard L. Butt — 31089 MD. LICENSE NO. — DATE: 1-28-16

PRINT NAME: RICHARD L. BUTT — FIRM NAME: KCI TECHNOLOGIES INC.

ADDRESS: 936 RIDGEBROOK ROAD SPARKS, MD 21152

TELEPHONE: (410) 316-7931

NOTE:
ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO

THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION, AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

Howard Soil Conservation District — Date 2/9/16

ENGINEER'S CERTIFICATE

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Richard L Butt — Date 1-28-16

Signature of Engineer (print name below signature)

Richard L Butt

DEVELOPER'S CERTIFICATE

"We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right of entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

C.N. LIGHTINGALE — Date 1-28-2016

Signature of Developer (print name below signature)

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

KCI TECHNOLOGIES — Engineers, Planners, Scientists, Construction Managers — 936 Ridgebrook Road, Sparks, MD 21152, Phone (410)316-7800, Fax (410)316-7803, www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275 TAX MAP: 35, GRID: 6
FILE: F-15-BDA-7 LOT: 2
TOWN CENTER: 5, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BUTT — No. 031089 — PROFESSIONAL ENGINEER — 1-15-16

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
EROSION & SEDIMENT CONTROL NOTES

DRAWING NO.
C8.03
SHEET: 13 OF 27

SCALE: N.T.S.
DATE: DECEMBER 18, 2015
PROJECT NO: 27146550

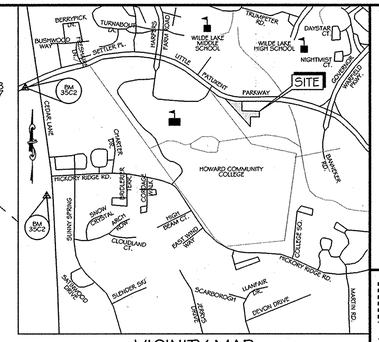
DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

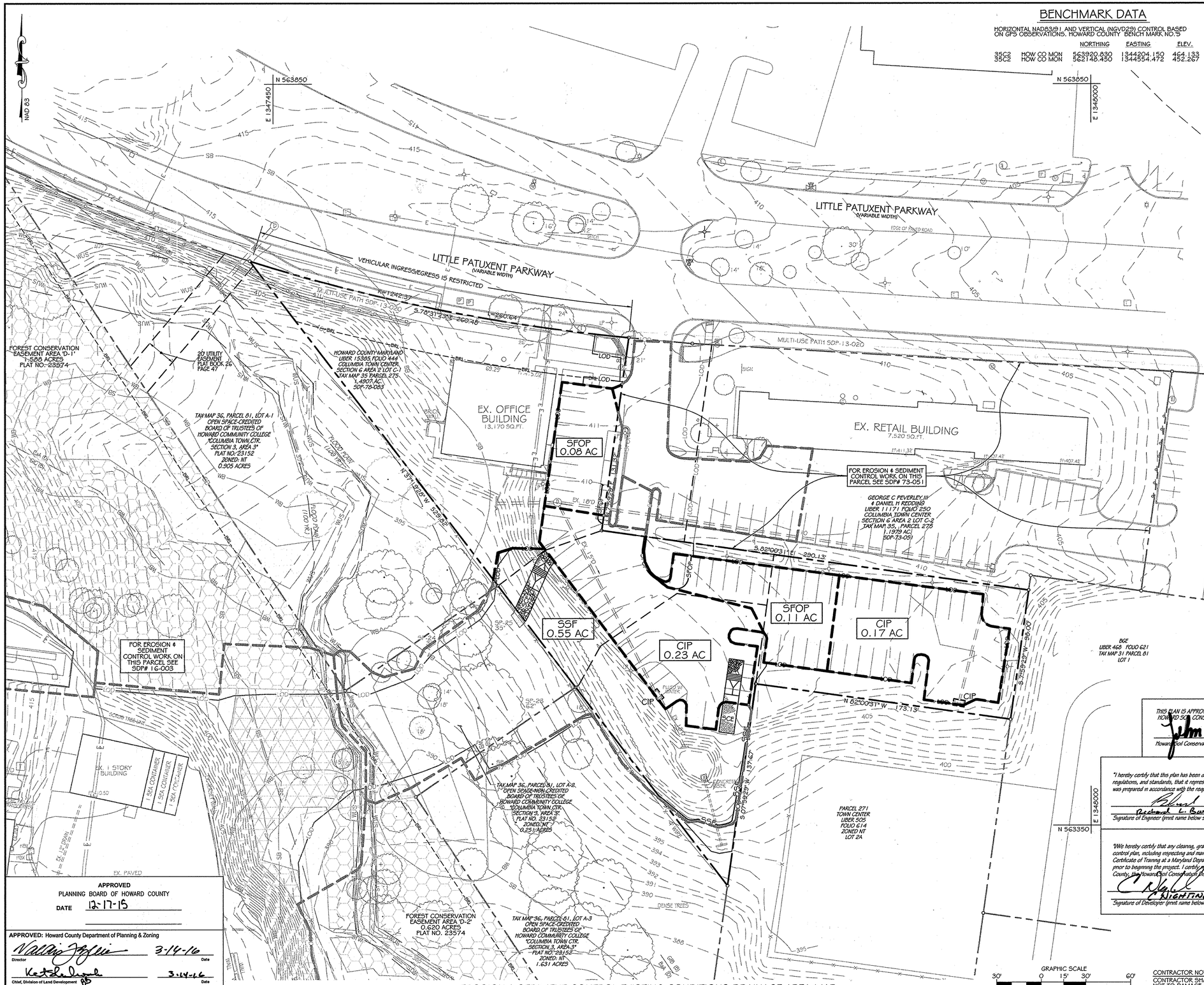
BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562748.450	1344654.472	452.267



VICINITY MAP
SCALE 1" = 1000'
ADC MAP: 15 GRID: D6



EROSION & SEDIMENT CONTROL EXISTING CONDITIONS DRAINAGE AREA MAP
SCALE: 1" = 30'

TOTAL AREA OF SITE = 1.49 ACRES
LIMIT OF DISTURBANCE (SDP 78-083) = 0.86 ACRES

LEGEND

- WB — 25' WETLAND BUFFER
- SB — 75' STREAM BUFFER
- WATERS OF THE U.S.
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- CIP — CURB INLET PROTECTION
- AGIP — STANDARD INLET PROTECTION
- COIP — COMBINATION INLET PROTECTION
- DRAINAGE AREA LINE
- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- SCE — STABILIZED CONSTRUCTION ENTRANCE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director	3-14-16 Date
Chief, Division of Land Development	3-14-16 Date
Chief, Development Engineering Division	2.16.16 Date

THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION, AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District — 2/9/16 Date

ENGINEER 'S CERTIFICATE

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation Distrct."

Richard L. Burtt — 1-28-16 Date
Richard L. Burtt
Signature of Engineer (print name below signature)

DEVELOPER 'S CERTIFICATE

"We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

C Nightingale — 1-28-2016 Date
C NIGHTINGALE
Signature of Developer (print name below signature)

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK, OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

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DESMAN ASSOCIATES

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SURVEYORS
CONSTRUCTION MANAGERS
10272 Baltimore Road
Stevens, MD 21152
Phone: (410)392-0900
Fax: (410)392-7803
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275 TAX MAP: 35 GRID: 6
FAIRLIFE PLAT NO.: 17,187 ZONE: NT
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND · RICHARD LEE BURTT · No. 031089 · PROFESSIONAL ENGINEER

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
EROSION & SEDIMENT CONTROL EXISTING CONDITIONS DRAINAGE AREA MAP

DRAWING NO.
C8.04
SHEET: 14 OF 27

SCALE:	1" = 30'
DATE:	JANUARY 15, 2016
PROJECT NO:	27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562748.450	1344554.472	452.267

NAD 83

N 563850

E 1347450

N 563850

E 1346000

LITTLE PATUXENT PARKWAY (VARIABLE WIDTH)

VEHICULAR INGRESS/EGRESS IS RESTRICTED

MULTI-USE PATH SDP-13-020

F-65-1 INTERSECTION UPGRADE

FOREST CONSERVATION EASEMENT AREA 'D-1' 1.588 ACRES PLAT NO: 23574

HOWARD COUNTY MARYLAND LIBER 15385 FOLIO 444 COLUMBIA TOWN CENTER, SECTION 6 AREA 2 LOT C-1 TAX MAP 35 PARCEL 275 1.4907 AC. SDP-78-083

TAX MAP 36, PARCEL 81, LOT A-1 OPEN SPACE-CREDITED BOARD OF TRUSTEES OF HOWARD COMMUNITY COLLEGE "COLUMBIA TOWN CTR. SECTION 3, AREA 3" PLAT NO: 23152 ZONED: NT 0.905 ACRES

SFOP 0.04 AC

EX. OFFICE BUILDING

CIP 0.07 AC

SFOP 0.19 AC

INSTALL 8' THICK BULKHEAD

CIP 0.15 AC

FOR EROSION & SEDIMENT CONTROL WORK ON THIS PARCEL SEE SDP# 73-051

EX. RETAIL BUILDING 7,520 SQ.FT.

GEORGE C PEVERLEY, III & DANIEL H REDDING LIBER 11171 FOLIO 250 COLUMBIA TOWN CENTER SECTION 6 AREA 2 LOT C-2 TAX MAP 35, PARCEL 275 1.1979 AC. SDP-73-051

SFOP 0.06 AC

SSF 0.13 AC

COIP 0.14 AC

INSTALL TEMP. 4' THICK BULKHEAD

CIP 0.17 AC

COIP 0.14 AC

SSP 0.33 AC

COIP 0.15 AC

FOR EROSION & SEDIMENT CONTROL WORK ON THIS PARCEL SEE SDP# 16-003

UPON COMPLETION REINSTALL SUPER SILT FENCE PER OUTFALL PROTECTION DETAIL ON SHEET C8.01

UPON COMPLETION REINSTALL SUPER SILT FENCE PER OUTFALL PROTECTION DETAIL ON SHEET C8.01

FOREST CONSERVATION EASEMENT AREA 'D-2' 0.620 ACRES PLAT NO. 23574

TAX MAP 36, PARCEL 81, LOT A-2 OPEN SPACE-NON-CREDITED BOARD OF TRUSTEES OF HOWARD COMMUNITY COLLEGE "COLUMBIA TOWN CTR. SECTION 3, AREA 3" PLAT NO. 23152 ZONED: NT 0.251 ACRES

TAX MAP 36, PARCEL 81, LOT A-3 OPEN SPACE-CREDITED BOARD OF TRUSTEES OF HOWARD COMMUNITY COLLEGE "COLUMBIA TOWN CTR. SECTION 3, AREA 3" PLAT NO: 23152 ZONED: NT 1.631 ACRES

PARCEL 271 TOWN CENTER LIBER 505 FOLIO 614 ZONED NT LOT 2A

BGE LIBER 468 FOLIO 621 TAX MAP 31 PARCEL 81 LOT 1

EX. 1 STORY BUILDING

1 SEA CONTAINER

1 SEA CONTAINER

1 SEA CONTAINER

EX. 1 STORY GARAGE

EX. PAVED

EX. GRASS

CONCRETE SIDEWALK

EX. CHAIN LINK

SCRUB TREE LINE

DENSE TREES

EDGE OF PAVED ROAD

EDGE OF GRAVEL

EDGE OF DEBRIS & TRASH

EX. PAVED PARKING AREA

TRANSFORMER

SIGN

MODDEN & NICHOLS RIDGE TABLE

N 82°00'31" W 173.13'

S 07°59'29" W 135.67'

S 82°00'31" E 260.48'

N 35° 12'00" W 329.82'

S 82°00'31" E 220.13'

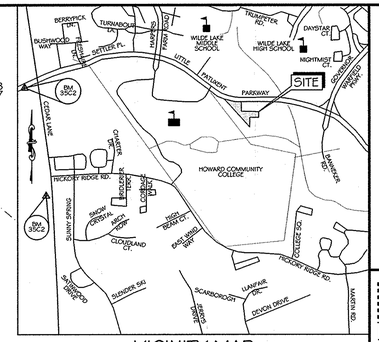
TOTAL AREA OF SITE = 1.49 ACRES
LIMIT OF DISTURBANCE (SDP 78-083) = 0.86 ACRES

LEGEND

- WB — 25' WETLAND BUFFER
- SB — 75' STREAM BUFFER
- BRL — WATERS OF THE U.S.
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- CIP — CURB INLET PROTECTION
- AGIP — STANDARD INLET PROTECTION
- COIP — COMBINATION INLET PROTECTION
- DRAINAGE AREA LINE
- LOD — LIMIT OF DISTURBANCE
- CD — CHECK DAM
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- SCE — STABILIZED CONSTRUCTION ENTRANCE

VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6



APPROVED

PLANNING BOARD OF HOWARD COUNTY

DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director	3-14-16 Date
Chief, Division of Land Development	3-14-16 Date
Chief, Development Engineering Division	2-16-16 Date

THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION, AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation Distrct — Date 2/9/16

ENGINEER 'S CERTIFICATE

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation Distrct."

Signature of Engineer (print name below signature) — Date 1-28-16

DEVELOPER 'S CERTIFICATE

"We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

C. Dwight Wadle — Date 1-28-2016

Signature of Developer (print name below signature)

EROSION & SEDIMENT CONTROL DEVELOPED CONDITIONS DRAINAGE AREA MAP

SCALE: 1" = 30'

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET)
SCALE: 1"= 30'

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
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ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

KCI TECHNOLOGIES
Engineers, Planners, Scientists, Construction Managers
936 Ridgebrook Road, Sparks, MD 21152
Phone (410)316-7800, Fax (410)316-7803
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD

PARCEL: 275, TAX MAP: 35, TAX GRID: 6
FIRST ELECTION DISTRICT 6, LOT C-1
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BUTT — No. 031089 — PROFESSIONAL ENGINEER — 1-28-16

ISSUE		

NO.	DESCRIPTION	DATE

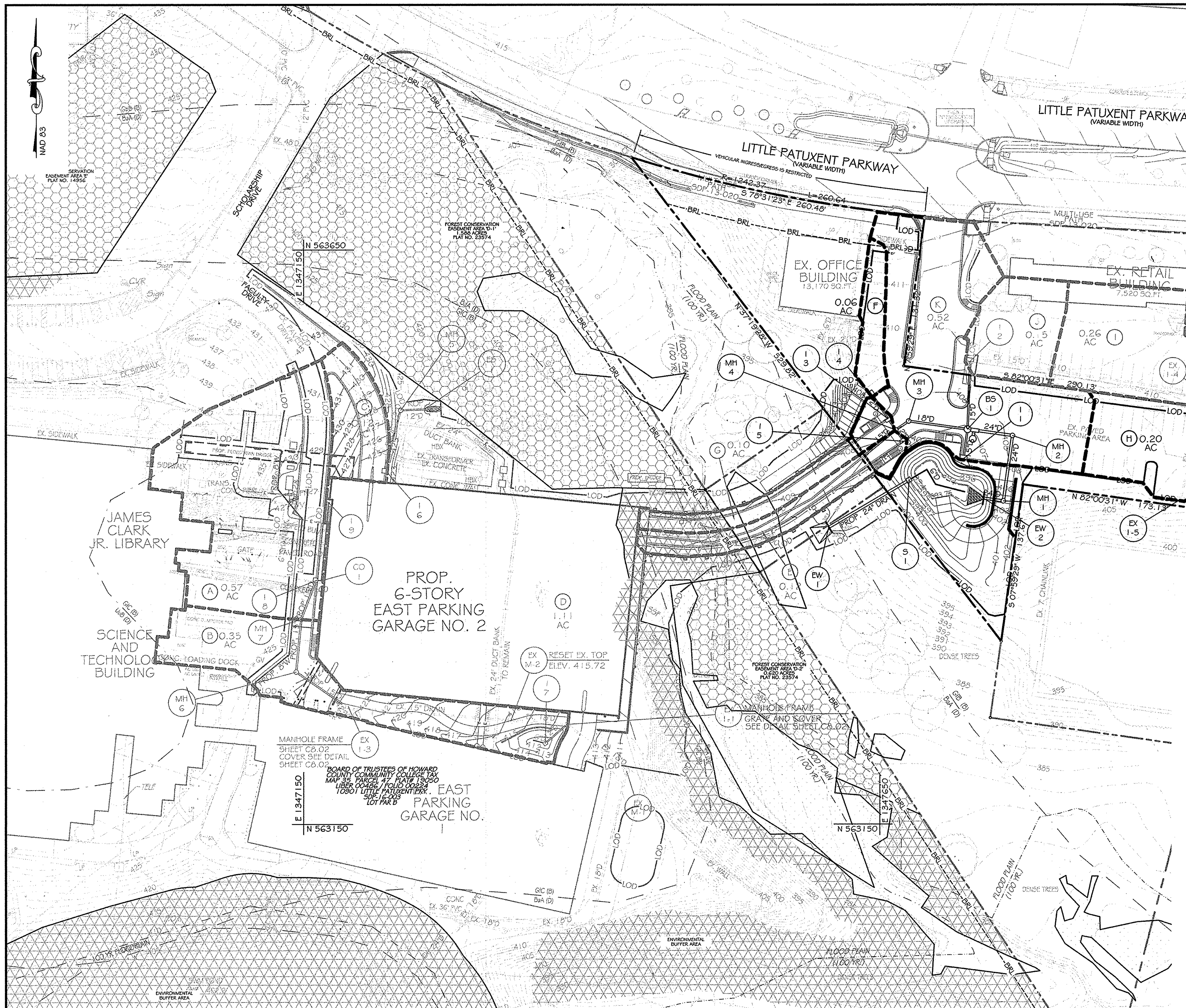
DRAWING TITLE:
EROSION AND SEDIMENT CONTROL DEVELOPED CONDITIONS DRAINAGE AREA MAP

DRAWING NO.
C8.05
SHEET: 15 OF 27

SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83



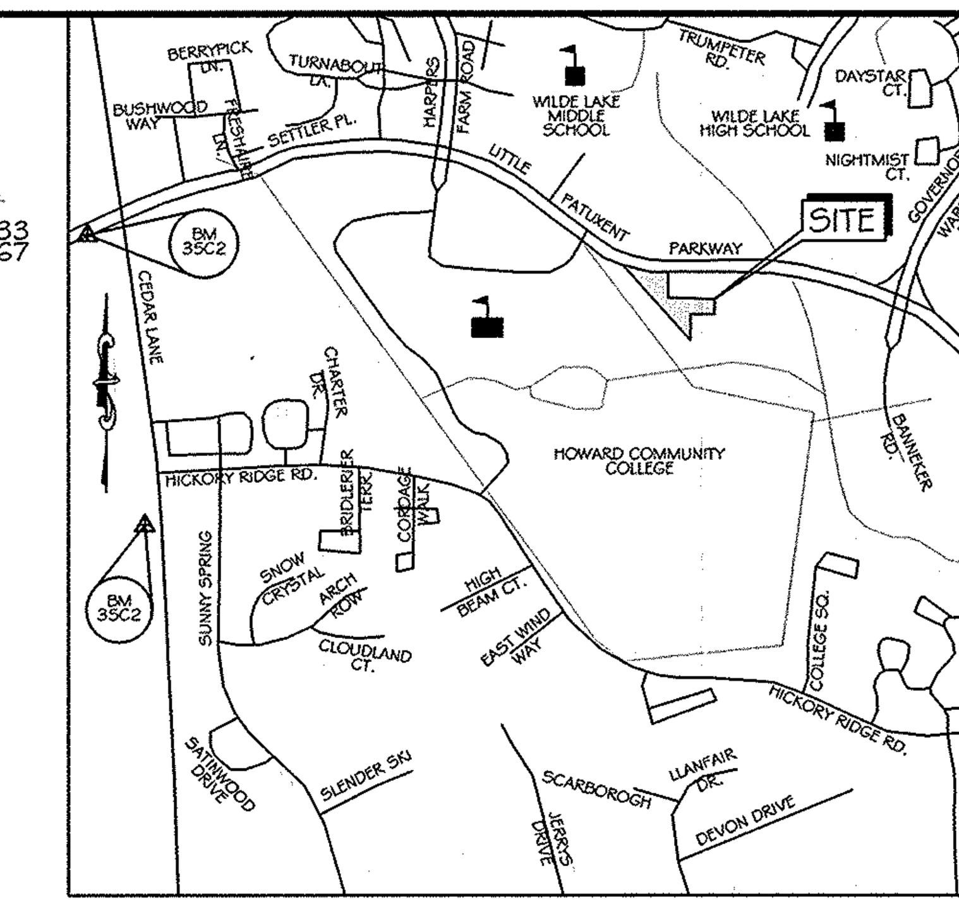
STORM DRAIN DRAINAGE AREA MAP

SCALE: 1" = 50'

BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.830	1344204.150	464.133
35C2	HOW CO MON	562148.450	1344554.472	452.267



VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6

LEGEND

GmB (C) / UuB (D)	SOILS LINE
— — —	DRAINAGE AREA LINE
—462—	PROP. CONTOUR
PROP. 18" DRAIN	PROP. STORM DRAIN
□	PROP. INLET
○	PROP. MANHOLE
(A)	DRAINAGE AREA

SOILS TABLE

SOIL UNIT	SOIL UNIT NAME	HYDROLIC SOIL GROUP
UuB (D)	Urban land-Udorthents complex, 0 to 8 percent slopes	D
GmB (C)	Glenville Silt Loam, 3 to 8 percent slopes	C
GbB (B)	Glandstone Loam, 3 to 8 percent slopes	B
BaA (D)	Baile Silt Loam, 0 to 3 percent slopes	D

STORM DRAIN DESIGN DATA

10 YEAR STORM

FROM	TO	AREA NO.	AREA (ACRES)	TOTAL AREA (ACRES)	TOTAL COEF. C	CxA	SUM CA	TC (MIN.)	RAINFALL INTENSITY ("/HR.)	Q (CFS.)	SIZE (IN.)	TYPE	N	So SLOPE (%)	L LENGTH (FT.)	Vo VOLUME (FT./SEC.)	TIME IN PIPE MIN.	REMARKS
I-5	MH-4	E	0.12		0.85	0.10		5.00	8.50	0.87	12"	RCP	0.014	0.07%	10.8'	1.70	0.1	
I-4	I-3	F	0.06		0.85	0.05/0.06		5.00	9.76/8.50	0.49	12"	RCP	0.014	0.02%	38.7'	0.62	0.9	SUMP 25 YR
	I-3	G	0.10		0.85	0.09		5.00	8.50	0.72								
I-3	MH-4	F+G		0.16			0.15	5.90	8.05	1.21	12"	RCP	0.014	0.13%	10.8'	1.50	0.1	
MH-4	MH-3	D-G		1.39			1.31	5.60	8.20	10.74	18"	RCP	0.014	1.18%	13.6'	6.05	0.0	
MH-3	BS-1	D-G		1.39			1.31	5.60	8.20	10.74	18"	RCP	0.014	1.18%	51.6'	6.05	0.1	
EX I-5	EX I-4	H	0.20		0.85	0.17/0.20		5.00	9.76/8.50	1.66	EX 15"	RCP	0.014	0.08%	95.0'	1.33	1.2	SUMP 25 YR
	EX I-4	I	0.26		0.85	0.22/0.25		5.00	9.76/8.50	2.15								SUMP 25 YR
EX I-4	I-2	H+I		0.46			0.45	6.20	8.10	3.65	EX 15"	RCP	0.014	0.37%	208.0'	3.00	0.6	
	I-2	J	0.15		0.85	0.13/0.15		5.00	9.76/8.50	1.27								SUMP 25 YR
I-2	BS-1	H-J		0.61			0.60	6.80	7.68	4.61	15"	RCP	0.014	0.60%	60.6'	3.70	0.3	
I-1	BS-1	K	0.52		0.75	0.39/0.45		5.00	9.76/8.50	3.81	15"	RCP	0.014	0.40%	24.5'	3.05	0.1	SUMP 25 YR
BS-1	MH-2	D-K		2.37			2.36	5.90	8.05	19.00	24"	RCP	0.014	0.80%	39.5'	6.00	0.1	
MH-2	MH-1	D-K		2.37			2.36	6.00	8.00	19.00	24"	RCP	0.014	0.80%	57.6'	6.00	0.2	
MH-1	EW-2	D-K		2.37			2.36	6.20	7.92	19.00	24"	RCP	0.014	0.80%	16.7'	6.00	0.2	

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

[signature] Director	3-14-16 Date
[signature] Chief, Division of Land Development	3-14-16 Date
[signature] Chief, Development Engineering Division	2-16-16 Date

GRAPHIC SCALE
50' 0 25' 50' 100'
(IN FEET)
SCALE: 1"= 50'

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
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3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

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LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK 26 / FOLIO 47
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND
RICHARD L. BUTT
No. 031089
PROFESSIONAL ENGINEER
1-15-16

ISSUE

NO.	DESCRIPTION	DATE

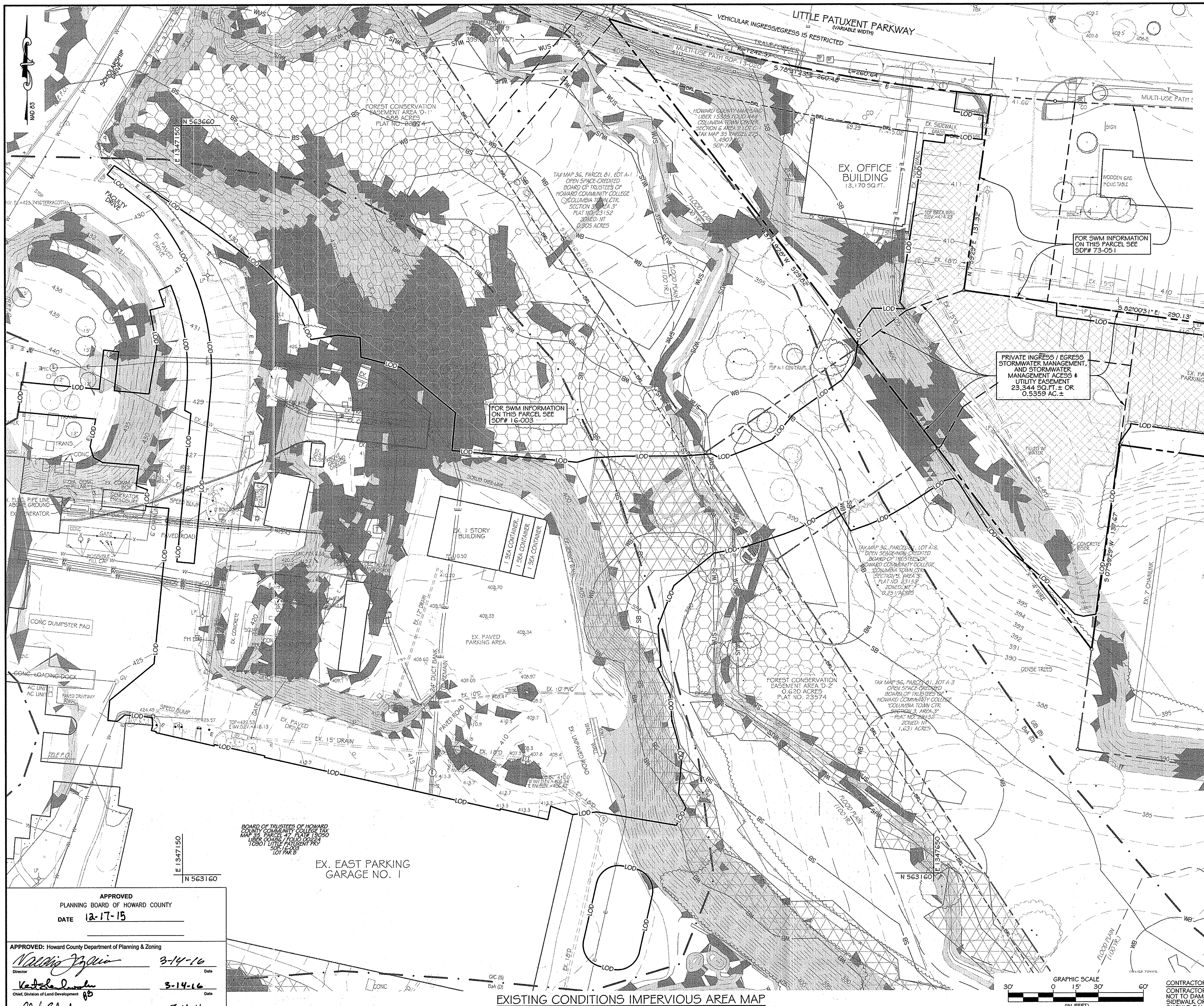
DRAWING TITLE:
STORM DRAIN DRAINAGE AREA MAP

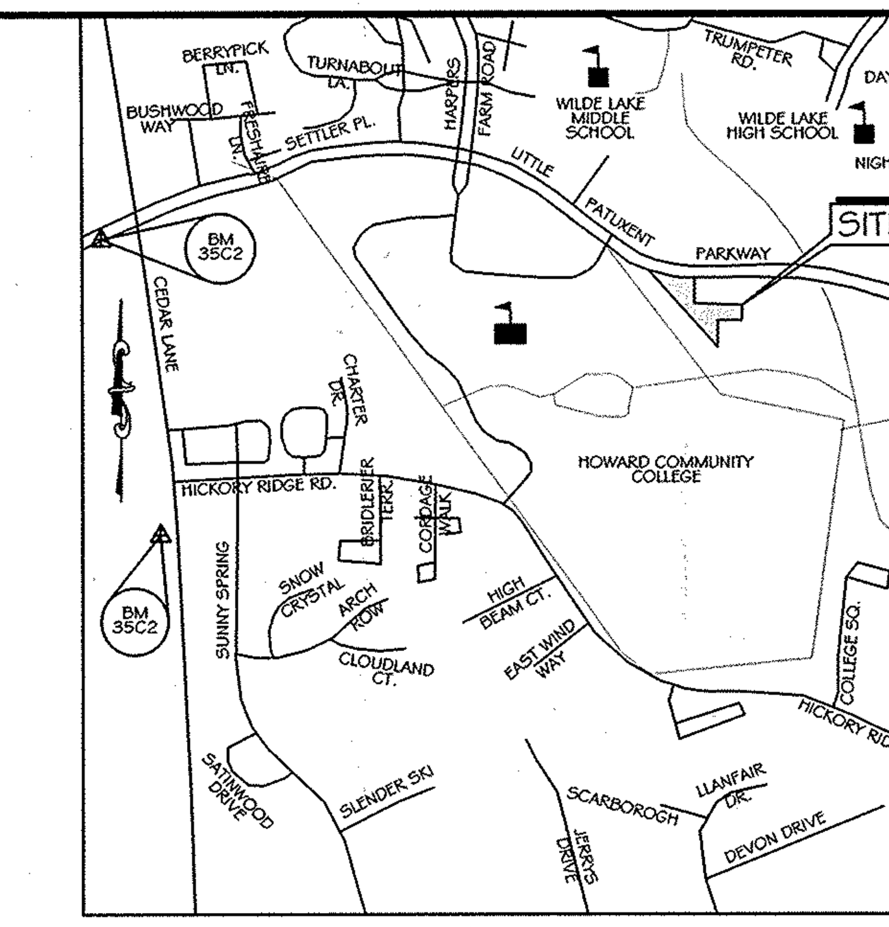
DRAWING NO.
C9.00
SHEET: 16 OF 27

SCALE: 1" = 50'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83





VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6

L.O.D. IMPERVIOUSNESS SUMMARY

TOTAL AREA INSIDE THE L.O.D. (SDP 78-083) = 37,554 S.F. (0.86 ACRES)
TOTAL IMPERVIOUS AREA INSIDE THE L.O.D. (SDP 78-083) = 26,022 S.F. (0.60 AC.)
TOTAL PERVIOUS AREA INSIDE THE L.O.D. (SDP 78-083) = 11,532 S.F (0.26 ACRES)

SOILS TABLE

SOIL UNIT	SOIL UNIT NAME	HYDROLIC SOIL GROUP	"K" VALUE
BaA	Baile Silt Loam, 0 to 3 percent slopes	D	0.37
GbB	Glandstone Loam, 3 to 8 percent slopes	B	0.28
GfB	Gladstone-Urban land complex, 0 to 8 percent slopes	A	0.28
GfC	Gladstone-Urban land complex, 8 to 15 percent slopes	A	0.28
UuB	Urban land-Udorthents complex, 0 to 8 percent slopes	D	0.28

INFORMATION WAS FOUND USING THE USDA WEB SOIL SURVEY

LEGEND

- WB — 25' WETLAND BUFFER
- SB — 75' STREAM BUFFER
- WUS — WATERS OF THE U.S.
- LOD — LIMIT OF DISTURBANCE
- LOW — LIMIT OF WORK
- BaA / GfB — SOILS LINES
- PROPERTY LINE
- 460 — EX. INDEX CONTOUR
- 458 — EX. INTERMEDIATE CONTOUR
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- APPROXIMATE LIMITS OF IMPERVIOUS AREA
- APPROXIMATE LIMITS OF AREA WHERE SLOPE GRADE ≥25%
- APPROXIMATE LIMITS OF AREA WHERE SLOPE GRADE ≥15% AND <25%

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Signature	Date
Director	3-14-16
Chief, Division of Land Development	3-14-16
Chief, Development Engineering Division	2.16.16

EXISTING CONDITIONS IMPERVIOUS AREA MAP

SCALE: 1" = 30'

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET)
SCALE: 1"= 30'

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

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LITLLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD

PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK 26 / FOLIO 47
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND · RICHARD L. BUTT · No. 031089 · PROFESSIONAL ENGINEER
1-15-16

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
EXISTING CONDITIONS IMPERVIOUS AREA MAP

DRAWING NO.
C10.00
SHEET: 17 OF 27

SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

DEVELOPED CONDITIONS IMPERVIOUS AREA MAP

SCALE: 1" = 30'

BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS, HOWARD COUNTY BENCH MARK NO.'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.630	1344204.150	464.133
35C2	HOW CO MON	562148.450	1344554.472	452.267

VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6

L.O.D. IMPERVIOUSNESS SUMMARY

TOTAL AREA INSIDE THE L.O.D. (SDP 78-083) = 37,554 S.F. (0.86 ACRES)
TOTAL IMPERVIOUS AREA INSIDE THE L.O.D. (SDP 78-083) = 24,625 S.F. (0.57 AC.)
TOTAL PERVIOUS AREA INSIDE THE L.O.D. (SDP 78-083) = 12,929 S.F. (0.29 ACRES)

LEGEND

- PROPERTY LINE
- DRAINAGE AREA LINE
- LOD — LIMIT OF DISTURBANCE
- 450 — PROP. CONTOUR
- 12" DRAIN — PROP. STORM DRAIN
- 8" WATER — PROP. WATER
- PROP. CURB & GUTTER
- FH — PROP. FIRE HYDRANT
- WV — PROP. WATER VALVE
- PROP. MANHOLE
- PROP. INLET
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- APPROXIMATE LIMITS OF IMPERVIOUS AREA

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET)
SCALE: 1"= 30'

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16
Chief, Division of Land Development — Date 3-14-16
Chief, Development Engineering Division — Date 2-16-16

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SURVEYORS, CONSTRUCTION MANAGERS
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LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275 TAX MAP: 35 GRID: 6
ZONED: NT PLAT NO.: 17,407 & 17,408
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BLAKE — NO. 031089 — PROFESSIONAL ENGINEER — 7/15/16

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
DEVELOPED CONDITIONS IMPERVIOUS AREA MAP

DRAWING NO.
C10.01
SHEET: 18 OF 27
SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

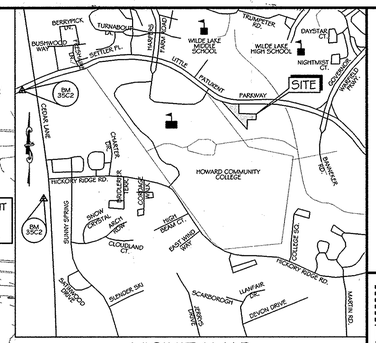
BENCHMARK DATA

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) CONTROL BASED ON GPS OBSERVATIONS. HOWARD COUNTY BENCH MARK NO 'S

		NORTHING	EASTING	ELEV.
35C2	HOW CO MON	563920.630	1344204.150	464.133
35C2	HOW CO MON	562748.450	1344654.472	452.267

VICINITY MAP

SCALE 1" = 1000'
ADC MAP: 15 GRID: D6



LEGEND

- PROPERTY LINE
- DRAINAGE AREA LINE
- LOD — LIMIT OF DISTURBANCE
- 400 — PROP. CONTOUR
- 12" DRAIN — PROP. STORM DRAIN
- E — E — PROP. ELECTRIC
- PROP. CURB & GUTTER
- PROP. MANHOLE
- PROP. INLET
- APPROXIMATE LIMITS OF ENVIRONMENTAL BUFFER AREA
- APPROXIMATE LIMITS OF FOREST CONSERVATION EASEMENT
- APPROXIMATE LIMITS OF NON-TIDAL WETLAND
- APPROXIMATE LIMITS OF IMPERVIOUS AREA
- APPROXIMATE LIMITS OF SAND

ESDv Summary Table

Watershed	Drainage Area Data: Area	Acres	RCN	Tc	% Impervious	Facility	Target: Pe	Target: ESDv (C.F.)	Provided: Pe	Provided: ESDv (C.F.)	Treated ESDv (C.F.)	Required ESDv (C.F.)
Little Patuxent	A	2.80			85%	SURFACE SAND FILTER			0.99	8,165	10,887	
	B	0.18			35%	MICRO-BIORETENTION			0.63	152	208	
	SITE											10,877
						Total ESDv =				8,317	11,095	10,877

PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS C-1 C-2 AND A-2 AND PRIVATE STORMWATER MANAGEMENT ACCESS & UTILITY EASEMENT FOR C-1; 0.1709 ACRES.

PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS C-1 AND A-2 AND PRIVATE STORMWATER MANAGEMENT FACILITY, AND STORMWATER MANAGEMENT ACCESS & UTILITY EASEMENT FOR LOT C-1; 0.5359 ACRES.

PROP. SURFACE SAND FILTER STORMWATER FACILITY #2 SEE SHEET C10.03 FOR DETAIL
SURFACE SAND FILTER
BOT. EL. = 393.75
ESDV. EL. = 397.50
TOP OF EMBKMNT. EL. = 400.25

PROP. MICR-BIORETENTION M-6 STORMWATER FACILITY #1 SEE SHEET C1.04 FOR DETAIL
BOT. EL. = 411.50
ESDV. EL. = 412.10

FOR SWM INFORMATION ON THIS PARCEL SEE SDP# 16-003

FOR SWM INFORMATION ON THIS PARCEL SEE SDP# 73-051

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16
Chief, Division of Land Development — Date 3-14-16
Chief, Development Engineering Division — Date 2-16-16

ENVIRONMENTAL SITE DESIGN PLAN

SCALE: 1" = 30'

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET)
SCALE: 1"= 30'

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

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Phone: (410)461-2855 Fax: (410)461-2525 www.kci.com

LITTLE PATUXENT PARKWAY
REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275 TAX MAP: 35 GRID: 6
PLAT NO: 23574 FOLIO: 47
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

GREMPLER REALTY INC.
LITTLE PATUXENT PARKWAY

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BISHOP — No. 031089 — PROFESSIONAL ENGINEER — 12/15/16

ISSUE		
NO.	DESCRIPTION	DATE

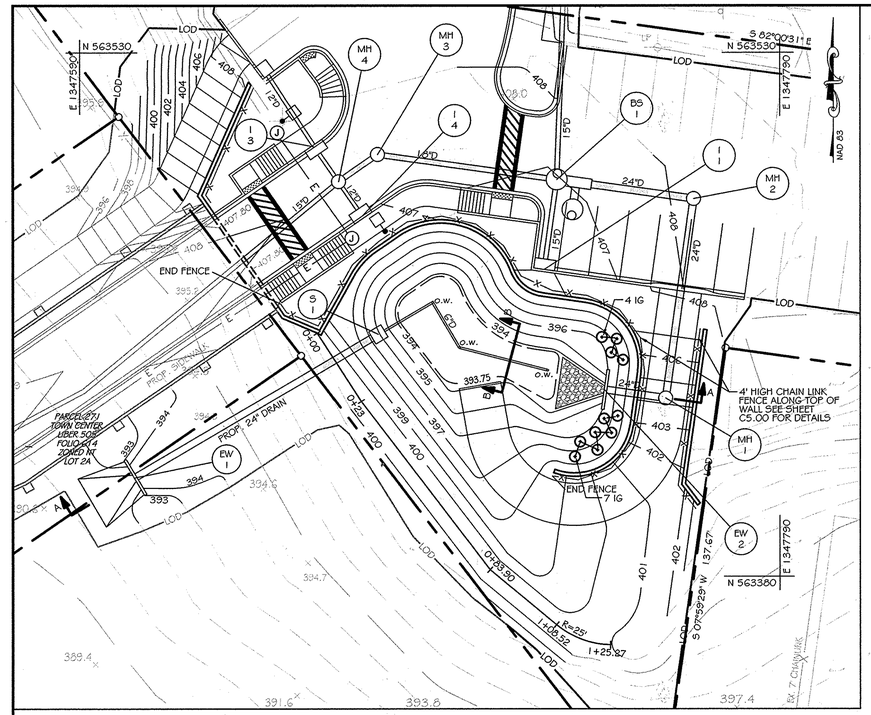
DRAWING TITLE:
ENVIRONMENTAL SITE DESIGN PLAN

DRAWING NO.
C10.02
SHEET: 19 OF 27

SCALE: 1" = 30'
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83



LANDSCAPE PLAN - FACILITY #2

SCALE: 1" = 20'

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	COMMENTS
IG	11	Ilex Glabra 'Shamrock' / Shamrock Inlberry	3'- 4' HT.	Cont.	5' O.C.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL & SMALL POND APPROVAL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Howard SCD — 2/9/16

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEET THE APPROVED PLANS AND SPECIFICATIONS.

ENGINEER — PE NO. 031089

DATE 1-28-16

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER — 1-28-2016 DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — 3-14-16 Date

Chief, Division of Land Development — 3-14-16 Date

Chief, Development Engineering Division — 2-16-16 Date

LEGEND

400	EX. CONTOURS
400	PROP. MAJOR CONTOUR
401	PROP. MINOR CONTOUR
12" DRAIN	PROP. STORM DRAIN
	PROP. INLET
	PROP. MANHOLE
O.W.	PROP. OBSERVATION WELL
	LIMIT OF SAND
	LIMIT OF STONE RESERVOIR
SWM-1	SOIL BORING

℄ BERM DATA

STATION	BEARING/ RADIUS	DISTANCE / ARC LENGTH	CHORD
0+00			
	S 32°43'48" E	0+23.29	
0+23.29			
	S 37°17'20" E	0+60.61	
0+83.90			
	S 50°19'49" E	0+24.62	
1+08.52			
	25R	0+16.43	S 69°31'28" E
1+25.27			

INSPECTION SCHEDULE

1. THE DEVELOPER SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
2. AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION:

(A) DURING EXCAVATION TO SUBGRADE;

(B) DURING PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEM;

(C) DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA;

(D) DURING CONSTRUCTION OF APPURTENANT CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, PRE-FILTERS, FILTERS, OUTLETS, AND FLOW DISTRIBUTION STRUCTURES; AND

(E) UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

3. INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
4. WRITTEN INSPECTION REPORTS SHALL INCLUDE:

(A) DATE AND LOCATION OF INSPECTION;

(B) WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;

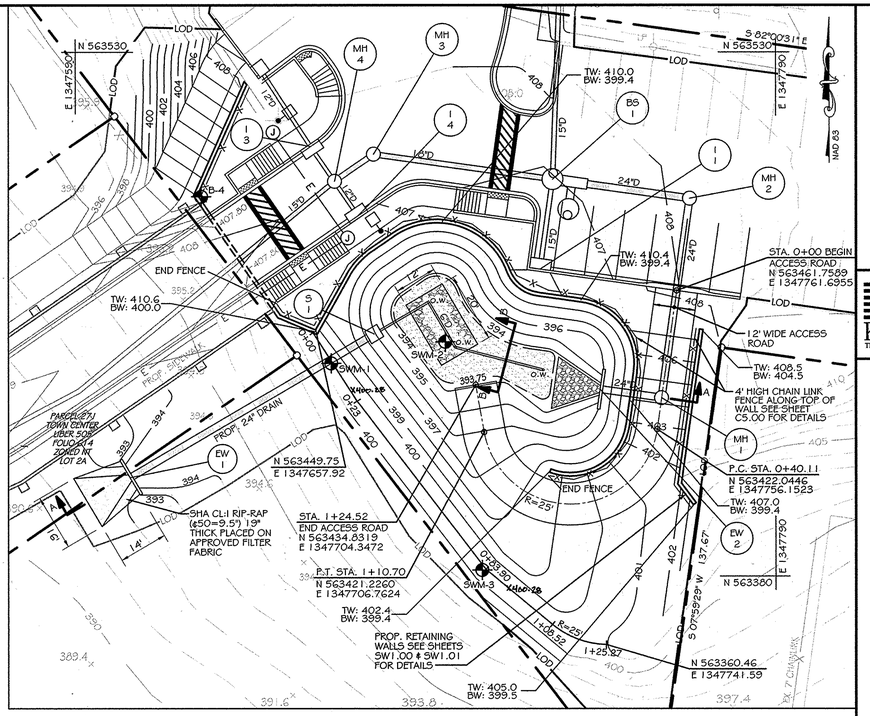
(C) ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS; AND

(D) ANY VIOLATIONS THAT EXIST.

5. ONCE CONSTRUCTION IS COMPLETE, AN AS-BUILT PLAN CERTIFICATION SHALL BE SUBMITTED BY THE APPROPRIATE DESIGN PROFESSIONAL LICENSED IN THE STATE OF MARYLAND TO ENSURE THE CONSTRUCTED STORMWATER MANAGEMENT PRACTICE AND CONVEYANCE SYSTEMS COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE APPROVED PLANS. AT A MINIMUM, AS-BUILT CERTIFICATION SHALL INCLUDE A SET OF DRAWINGS COMPARING THE APPROVED STORMWATER MANAGEMENT PLAN WITH WHAT WAS CONSTRUCTED.

OPERATION AND MAINTENANCE SCHEDULE PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1)

1. THE STORMWATER FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHED 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
7. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
8. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOG BOOK SHALL BE AVAILIBLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE FILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

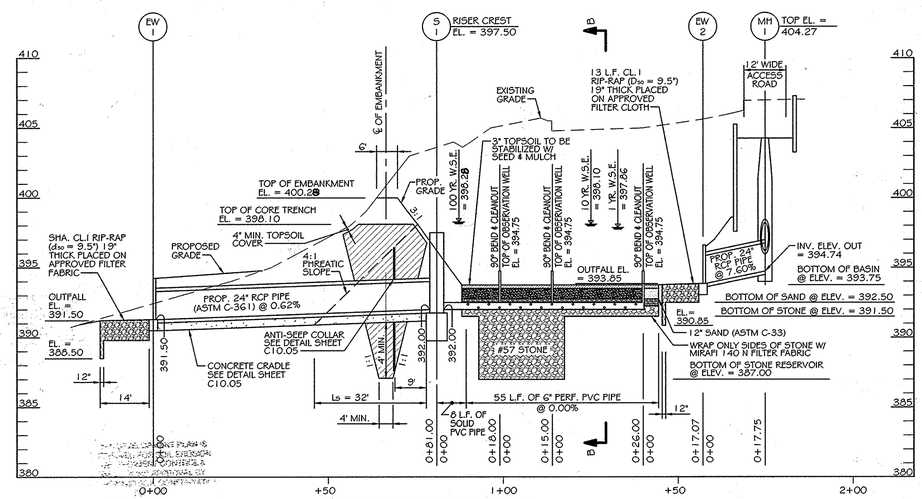


SURFACE SAND FILTER (F-1) - FACILITY #2 PLAN

SCALE: 1" = 20'

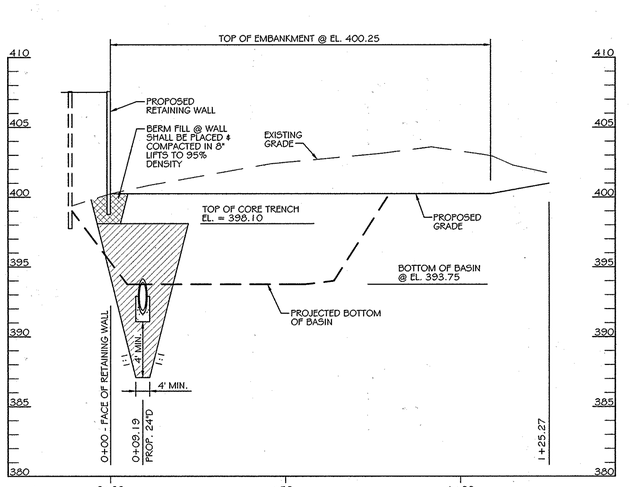
STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
2. NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
3. CLEAR, GRUB, AND INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
4. REFER TO SEDIMENT CONTROL PLAN FOR SEDIMENT BASIN CONSTRUCTION.
5. UPON STABILIZATION OF DRAINAGE AREA EXCAVATE FOR INSTALLATION OF SAND FILTER. (2-DAYS)
6. INSTALL SAND FILTER AND UNDERDRAINS. (3-DAYS)
7. FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA. (2-DAYS)



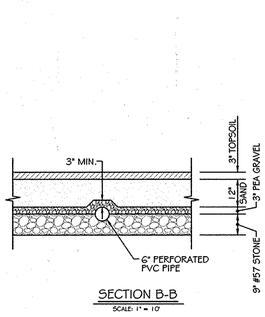
SURFACE SAND FILTER FACILITY #2
SECTION A-A

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



SURFACE SAND FILTER FACILITY #2
CENTERLINE BERM

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



SECTION B-B

SCALE: 1" = 10'

CONTRACTOR NOTE:

CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

KCI TECHNOLOGIES — Engineers, Planners, Scientists, Construction Managers
936 Ridgebrook Road, Sparks, MD 21152
Phone: (410) 316-9900
Fax: (410) 316-9905
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD

PARCEL: 275, TAX MAP: 35, GRID: 6
PLAT: 21,909, ZONE: MXD-3
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089
EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BUTT — No. 031089 — PROFESSIONAL ENGINEER — 1-15-16

ISSUE

NO.	DESCRIPTION	DATE

DRAWING TITLE:

STORMWATER MANAGEMENT FACILITY #2

DRAWING NO.

C10.03

SHEET: 20 OF 27

SCALE: 1" = 30'

DATE: JANUARY 15, 2016

PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

POND CONSTRUCTION SPECIFICATIONS

GENERAL

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY "STANDARD SPECIFICATIONS AND THE N.R.C.S. MARYLAND "STANDARDS AND SPECIFICATIONS FOR PONDS" (MARYLAND CODE 378 POND - JANUARY 2000)

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS SHOWN ON THESE PLANS. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAT 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT. IF REQUIRED, CUTOFF TRENCH WILL BE SHOWN ON PLANS.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF
THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM
PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL
SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR
VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THE 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT-OFF TRENCH - THE CUTOFF TRENCH (NOT REQUIRED UNLESS SHOWN ON PLANS) SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS.THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET, SHALL GOVERN THE BOTTOM WIDTH OF THE TRENCH. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE - THE CORE (NOT REQUIRED UNLESS SHOWN ON PLANS) SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENTS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

CORE DAM / TRENCH MATERIAL SHALL BE 'CL', 'SC', 'CH' OR 'GC' ONLY. CONTRACTOR SHALL ASSUME CORE DAM / TRENCH MATERIAL IS NOT AVAILABLE ON-SITE & MUST BE OBTAINED FROM AN OFF-SITE LOCATION.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GRATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVELY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE WHEN USING FLOWABLE FILL. ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

REMOVAL AND REPLACEMENT OF DEFECTIVE FILL

FILL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITY OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED ACCEPTABLE RANGE OF MOISTURE CONTENT OR OTHERWISE NOT CONFORMING TO THE REQUIREMENTS OF THE SPECIFICATIONS SHALL BE REWORKED TO MEET THE REQUIREMENTS OR REMOVED AND REPLACED BY ACCEPTABLE FILL. THE BOTTOMS OF SUCH EXCAVATIONS SHALL BE FINISHED FLAT OR GENTLY CURVING AND AT THE SIDES OF SUCH EXCAVATIONSTHE ADJACENT SOUND FILL SHALL BE TRIMED TO A SLOPE NOT STEEPER THAN 3 FEET HORIZONTALLY TO 1 FOOT VERTICALLY EXTENDING FROM THE BOTTOM OF THE EXCAVATION TO THE FILL SURFACE.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

ALL PERFORATED PIPES SHALL HAVE A MINIMUM OF 1 SQUARE INCH OF OPENING PER LINEAR FOOT OF PIPE.

REINFORCED CONCRETE PIPE

ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE.

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDINGCRADLE IF NOTED ON PLANS. THIS BEDDINGCRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. CONNECTIONS - ALL CONNECTIONS (TO ANTI-SEEP COLLARS, RISER, ETC.) SHALL BE WATER TIGHT.

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE PLANS.

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIAL - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4"-10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF THE MARYLAND STATE HIGHWAY ADMINISTRATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS", ARE THOSE DATED JANUARY, 2001;SECTION 420 AND 920, MIX NO. 3.

CAST IN PLACE CONCRETE STRUCTURES (ANTI-SEEP COLLAR)

1. SPECIFICATIONS: MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION.

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION, FOR DESIGN. CONCRETE DESIGN BY THE "SERVICE LOAD DESIGN METHOD".

2. CONCRETE: SHALL MEET THE REQUIREMENTS OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 420 AND 920, MIX NO. 3.

3. CONTRACTOR MAY ADD COLOR MIX (IF SPECIFIED ON PLAN) AT PLANT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION "C-12 MESA BEIGE" AS MANUFACTURED BY L. M. SCOFIELD COMPANY 213) 723-5285.

CONTRACTOR SHALL SUPPLY MIX DESIGN FOR APPROVAL PRIOR TO APPLICATION. LOAD AND MIX TICKETS SHALL BE SUPPLIED FOR EACH TRUCK DELIVERY. NO PARTIAL FIELD MIXES SHALL BE ALLOWED.

ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS. DESIGN FC = 1,200 PSI.

ALL CONSTRUCTION KEYS SHALL BE 3/4" UNLESS OTHERWISE NOTED.ALL CONSTRUCTION KEYS ARE SHOWN NOMINAL SIZE.

4. REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. WHERE NOT INDICATED, BAR LAP SPLICES SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS. THE MINIMUM CONCRETE COVER SHALL BE 2 INCHES UNLESS OTHERWISE NOTED. DESIGN FS = 24,000 PSI.

5. FOUNDATION: PRESUMED SOIL BEARING CAPACITY = 2,500 PSF. THE ENGINEER MUST APPROVE ALL FOUNDATIONS PRIOR TO CONCRETE PLACEMENT. IF UNSUITABLE MATERIAL IS ENCOUNTERED, THE MATERIAL SHALL BE UNDERCUT AND BACKFILLED WITH STRUCTURAL BACKFILL.

6. STRUCTURAL BACKFILL: CAST-IN-PLACE CONCRETE STRUCTURES AND PIPE SHALL BE BACKFILLED WITH MATERIAL OF THE TYPE AND QUALITY CONFORMINGTO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. STRUCTURAL FILL SHALL BE PLACED IN LOOSE LIFTS OF APPROXIMATELY 6 INCHES, AND COMPACTED TO 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH AASHTO T-180. THE STATIC WEIGHT OF EQUIPMENT USED ADJACENT TO WALLS SHALL NOT EXCEED 3,000 POUNDS. NO BACKFILL SHALL BE PLACED AGAINST THE CAST-IN-PLACE WALLS UNTIL THE CONCRETE HAS ATTAINED THE SPECIFIED 28 DAY STRENGTH.

PRE-CAST CONCRETE STRUCTURES

SHOP DRAWINGS FOR PRE-CAST STRUCTURES MEETING ASTM REQUIREMENTS FOR PRE-CAST STRUCTURES WITH SUPPORTING STRUCTURAL COMPUTATIONS (SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER) MUST BE SUBMITTED TO THE ENGINEER, AND THE APPROVING AGENCY (BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT) FOR APPROVAL PRIOR TO FABRICATION.

GABIONS

ALL GABIONS SHALL BE PVC COATED WOVEN WIRE BASKETS. STONE SIZE SHALL BE 4 INCHES TO 7 INCHES (CLASS IV GABIONS).

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OR WATER FROM VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING. ALL SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES. ALL DISTURBED AREAS SHALL BE CONTROLLED BY AN EROSION AND SEDIMENT CONTROL PLAN WHICH HAS BEEN APPROVED BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

FILTER CLOTH

ALL FILTER CLOTH SHALL CONFORM TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, OR THE LATEST EDITION.

CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS

THE CONSTRUCTION OF THE POND AND EMBANKMENT, AND CERTIFICATION THAT THE POND AND EMBANKMENT HAVE BEEN BUILT IN ACCORDANCE WITH THE PLANS SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. THE ENGINEER SHALL BE NOTIFIED SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT ARRANGEMENTS CAN BE MADE FOR (1) INSPECTION OF PIPE TRENCH AND BEDDING, (2) INSPECTION OF RISER AND ANTI-SEEP COLLARS AND (3) SUPERVISION OF EMBANKMENT CONSTRUCTION AND COMPACTION TESTING. THE ENGINEER SHALL DIRECT THE HANDLING OF WATER DURING CONSTRUCTION, MINOR CHANGES NOT AFFECTING THE INTEGRITY OF THE DAM IN ORDER TO COMPENSATE FOR UNUSUAL SOIL CONDITIONS, AND THE REMOVAL AND REPLACEMENT OF DEFECTIVE FILL.

PERFORATED PIPE

SCHEDULE 40 PVC OR SDR35:
PERFORATED PIPE SHALL COMPLY WITH AASHTO M278 OR ASTM F-758 HIGHWAY UNDERDRAIN SPECIFICATIONS.

WRAP PIPE WITH 1/4" MESH (OR SMALLER) GALVANIZED HARDWARE CLOTH.

HDPE:
4" & 6" PERFORATED PIPE SHALL HAVE 3 ROWS (@120°) OF 0.12" x 0.875" SLOTS THAT PROVIDE A MINUMUM OPEN AREA OF 1 SQ.IN. PER LINEAR FOOT OF PIPE.

PIPE SHALL BE PLACED WITH PERFORATIONS DOWN.

PIPE WITH SLOTTED PERFORATIONS IS NOT REQUIRED TO BE WRAPPED WITH HARDWARE CLOTH.

AS-BUILT DATA FOR SURFACE SAND FILTER

ITEM	DESIGN	AS-BUILT
RISER WEIR HEIGHT & LENGTH (ALL 4 SIDES)		
RISER WEIR CREST ELEV.		
UNDERDRAIN DIA. & INV.		
RECHARGE TRENCH DIMENSIONS		
SAND FILTER AREA		
SAND FILTER DEPTH		
SAND FILTER VOLUME		

MATERIALS SPECIFICATIONS FOR SAND FILTERS

MATERIAL	SPECIFICATION/TEST METHOD	SIZE	NOTES
SAND	CLEAN AASHTO-M-6 OR ASTM-C-33 CONCRETE SAND	0.02" TO 0.04"	
PEAT	ASH CONTENT: <15% PH RANGE: 5.2 TO 4.9 LOOSE BULK DENSITY 0.12 TO 0.15 G/CC	N/A	THE MATERIAL MUST BE REED-SEDGE HEMIC PEAT, SHREDDED, UNCOMPACTED, UNIFORM, AND CLEAN.
LEAF COMPOST		N/A	
UNDERDRAIN GRAVEL	AASHTO-M-43	0.375" TO 0.75"	
GEOTEXTILE FABRIC (IF REQUIRED)	ASTM-D-4833 (PUNCTURE STRENGTH - 125 LB. ASTM-D-4632 (TENSILE STRENGTH - 300 LB.)	0.08" THICK EQUIVALENT OPENING SIZE OF #80 SIEVE	
IMPERMEABLE LINER (IF REQUIRED)	ASTM-D-4833 (THICKNESS) ASTM-D-412 (TENSILE STRENGTH - 1,100 LB., ELONGATION 200%) ASTM-D-624 (TEAR RESISTANCE - 150 LB./IN) ASTM-D-471 (WATER ADSORPTION: +6 TO -2% MAS5)	30 MIL THICKNESS	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO-M-278	4" - 6" RIGID SCHEDULE 40 PVC OR SDR35	
CONCRETE (CAST-IN-PLACE)	MSHA STANDARDS AND SPECS. SECTION 902, MIX NO. 3, Fc = 3500 PSI, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	
CONCRETE (PRE-CAST)	PER PRE-CAST MANUFACTURER	N/A	SEE ABOVE NOTE
NON-REBAR STEEL	ASTM A-36	N/A	

SURFACE SAND FILTER CONSTRUCTION INSPECTION CHECKLIST

PHASE	DATE	INITIALS	REMARKS - DESCRIPTION OF ACTION TAKEN
1. EXCAVATION TO SUBGRADE OF SAND FILTER & STONE RESERVOIR			
2. INSTALLATION OF END WALL EW-1, RIP-RAP, STRUCTURES B8-1 & B-1.			
3. PLACEMENT OF #57 STONE IN STONE RESERVOIR AND GEOTEXTILE FABRIC.			
4. INSTALLATION OF UNDERDRAIN SYSTEM WITH CLEANOUTS, OBSERVATION WELL & REMAINING FILTER MEDIA.			
6. FINAL GRADING AND PERMANENT STABILIZATION.			

I HEREBY CERTIFY THAT I PERSONALLY REVIEWED OR A PERSON UNDER MY DIRECT SUPERVISION PROVIDED THE INFORMATION REPORTED ON THIS CHECKLIST AND TO THE BEST OF MY KNOWLEDGE DO HEREBY INSURE THAT THE SUBMITTAL IS COMPLETE AND ACCURATE.

PROFESSIONAL ENGINEER SIGNATURE AND DATE
(As - Built)

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16

Chief, Division of Land Development — Date 3-14-16

Chief, Development Engineering Division — Date 2.16.16

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL & SMALL POND APPROVAL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED Howard SCD 2/9/16

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES
KCI TECHNOLOGIES — Engineers, Planners, Surveyors, Construction Managers
936 Ridgebrook Road, Sparks, Maryland 21152
Phone (410)316-7800, Fax (410)316-7803, www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL - 275, TAX MAP: 35, GRID: 6
FILE NO. - F-77-47, LOT C-1
TOWN CENTER 6/24
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089
EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BISSEN — No. 031089 — PROFESSIONAL ENGINEER — 1-6-16

ISSUE		
NO.	DESCRIPTION	DATE

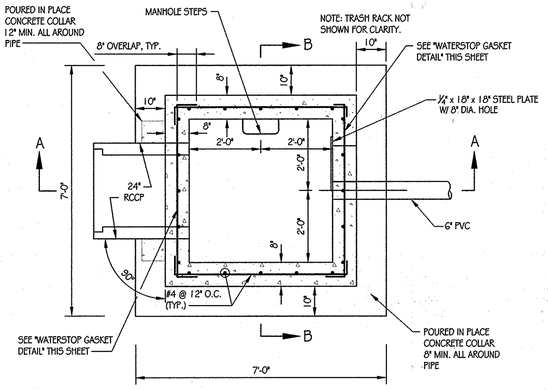
DRAWING TITLE:
STORMWATER MANAGEMENT NOTES

DRAWING NO.
C10.04
SHEET: 21 OF 27

SCALE: N.T.S.
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83



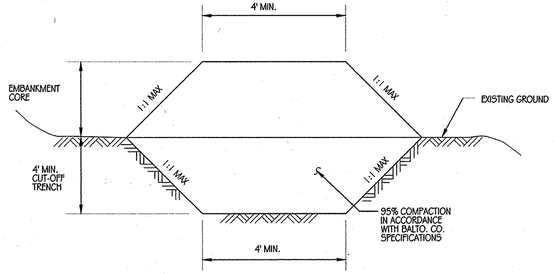
TOP VIEW

PRE-CAST CONCRETE AND PRE-FABRICATED STEEL STRUCTURE NOTES

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE STRUCTURAL DESIGN COMPUTATIONS FOR FABRICATED CONCRETE AND STEEL COMPONENTS AS REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY OF THE PRE-CAST CONCRETE RISER AND WELDED STEEL TRASH RACK, IN CONFORMANCE WITH THE INFORMATION AND DIMENSIONAL CRITERIA ON THIS SHEET. SHOP DRAWINGS FOR THE TRASH RACK AND THE PRE-CAST STRUCTURES (MEETING ASTM REQUIREMENTS), WITH THE SUPPORTING STRUCTURAL COMPUTATIONS (SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER), MUST BE SUBMITTED TO THE ENGINEER, AND THE APPROVING AGENCY, FOR APPROVAL, PRIOR TO FABRICATION.

IF ANY STRUCTURE DIMENSIONS VARY FROM THOSE ORIGINALLY REVIEWED/ APPROVED, THEN THE HYDRAULICS, FLOTATION AND STRUCTURAL INTEGRITY WILL HAVE TO BE RE-ANALYZED.

ALL JOINTS AND CONNECTIONS SHALL BE WATERTIGHT. METHOD OF ACHIEVING A WATERTIGHT SEAL BETWEEN THE RISER STRUCTURE, AND ALL CONDUITS (I. E., BARREL AND LOW FLOW PIPES) SHALL BE APPROVED BY THE ENGINEER IN CHARGE, PRIOR TO FABRICATION.

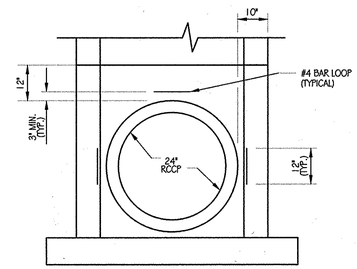


NOTES:

1. IF WATER IS ENCOUNTERED DURING THE CONSTRUCTION OF THE CORE TRENCH, IT IS TO BE REMOVED BY PUMPING
2. CORE TRENCH SHALL CONSIST OF IMPERVIOUS MATERIAL (CL, CH) AS DIRECTED BY THE ONSITE GEOTECHNICAL ENGINEER AND MAY REQUIRE TO BE HAULED FROM AN OFFSITE LOCATION.

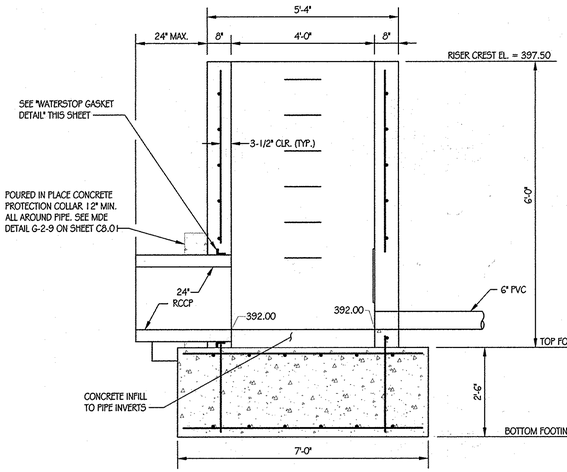
CORE DAM / TRENCH SECTION

SCALE: NOT TO SCALE

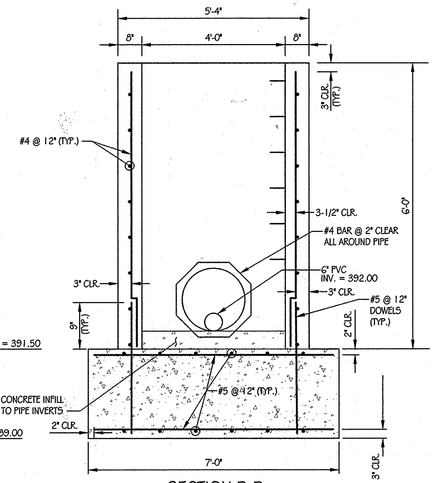


CONCRETE COLLAR @ RISER DETAIL

SCALE: NOT TO SCALE



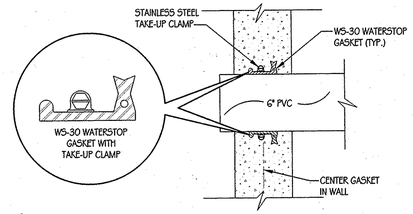
SECTION A-A



SECTION B-B

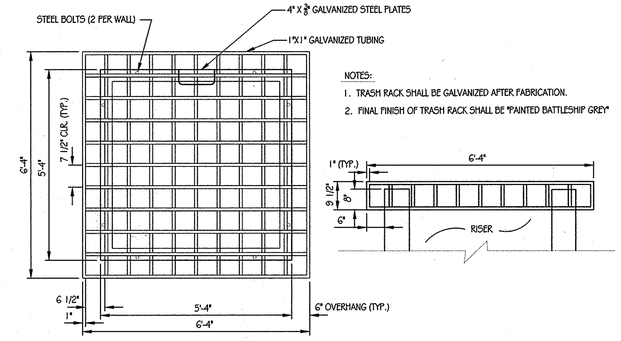
RISER DETAIL (S-1)

SCALE: ½" = 1'-0"



WS-30 WATERSTOP GASKET DETAIL

SCALE: NOT TO SCALE



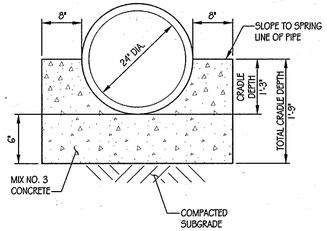
NOTES:

1. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION.
2. FINAL FINISH OF TRASH RACK SHALL BE "PAINTED BATTLESHIP GREY"

TOP VIEW ELEVATION

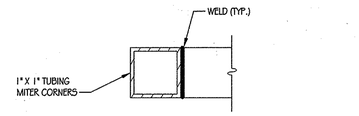
TRASH RACK DETAIL

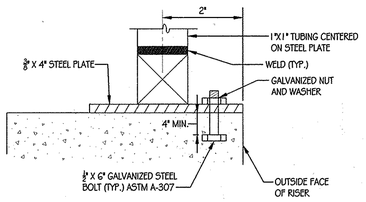
SCALE: ½" = 1'-0"



USDA-NRCS, TR-46, A-2 CONCRETE CRADLE DETAIL

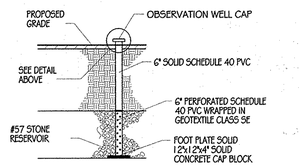
SCALE: NOT TO SCALE





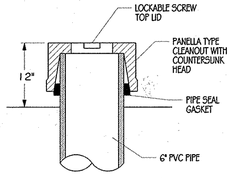
TRASH RACK WELDING DETAIL

SCALE: NOT TO SCALE



OBSERVATION WELL DETAIL

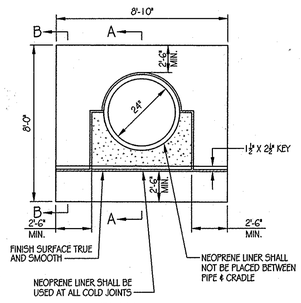
NOT TO SCALE



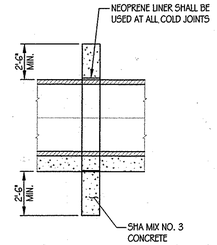
SCREW TOP CAP

NOT TO SCALE

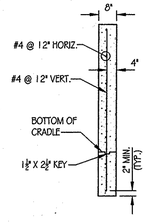
NOTE:
THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS.



PLAN



SECTION A-A



SECTION B-B

SHOWING STEEL

NOTE: ANTI-SEEP COLLARS SHALL BE PLACED A MINIMUM OF 2 FEET FROM PIPE JOINTS.

ANTI-SEEP COLLAR DETAIL (CAST-IN-PLACE)

SCALE: NOT TO SCALE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3.14.16

Chief, Division of Land Development — Date 3-14-16

Chief, Development Engineering Division — Date 2.16.16

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL & SMALL POND APPROVAL BY THE HOWARD SOIL CONSERVATION DISTRICT
APPROVED Howard SCD 2/9/16

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTORS EXPENSE.

Prepared For and Owner:
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3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

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Fax (410)316-7803
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALTY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275 TAX MAP: 35, GRID: 6
PLAT: PLAT BOOK: 45, FOLIO: 47
TOWN CENTER: 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND — RICHARD L. BUSH — No. 031089 — PROFESSIONAL ENGINEER — 12/15/16

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
STORMWATER MANAGEMENT DETAILS

DRAWING NO.
C10.05
SHEET: 22 OF 27

SCALE: N.T.S.
DATE: DECEMBER 18, 2015
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83

FROEHLING & ROBERTSON, INC.

BORING LOG

Boring: BB-04 (1 of 1)

Project No: 68S-0077
Client: Desman Associates
Project: HCC East Garage Expansion
City/State: Columbia, Maryland

Elevation: 398 ±
Total Depth: 38.0'
Boring Location: See Location Plan

Drilling Method: 3.25" ID HSA
Hammer Type: Automatic
Date Drilled: 5/1/15
Driller: Rice

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/Ft)	Remarks
397.8	0.3	3" of Surficial soil containing organics and clayey silt	3-2-2	0.0 1.5	4	GROUNDWATER DATA
		ResiduumBrown, Moist, Loose to Medium Dense, Silty Sand with clay (SM-ML)	5-5-9	3.5 5.0	14	Water at 5 feet 24 hrs After Boring
			3-2-3	6.0 7.5	5	Water encountered at 7 feet upon completion
			2-1-2	8.5 10.0	3	Cave in at 9 feet
384.5	13.5	Brown, Moist, Medium Dense, Silty Sand (SM)	2-4-6	13.5 15.0	10	
			4-8-9	18.5 20.0	17	
			3-5-7	23.5 25.0	12	
369.0	29.0	**Weathered Rock**White, Moist, Very Dense,Sand and Rock Fragments - Weathered Rock	9-50/3"	28.5	100+	
			50/2"	33.5	100+	
360.0	38.0	Boring Terminated at 38 feet on auger refusal.	50/1"	38.0	100+	

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

BORING_LOG (LONG NAME) 68S-0077A.GPJ F&R.GDT 5/4/15

FROEHLING & ROBERTSON, INC.

BORING LOG

Boring: SWM-1 (1 of 1)

Project No: 68S-0077
Client: Desman Associates
Project: HCC East Garage Expansion
City/State: Columbia, Maryland

Elevation: 400 ±
Total Depth: 20.0'
Boring Location: See Location Plan

Drilling Method: 3.25" ID HSA
Hammer Type: Automatic
Date Drilled: 5/1/15
Driller: Rice

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/Ft)	Remarks
399.8	0.3	3" of Surficial soil containing organics and clayey silt	1-2-2	0.0 1.5	4	GROUNDWATER DATA
		ResiduumBrown, Moist, Loose, Silty Sand with clay (SM-ML)	2-4-5	3.5 5.0	9	
			1-2-3	6.0 7.5	5	Water at 6.5 feet 24 Hours after boring completion
			2-2-2	8.5 10.0	4	Water encountered at 9 feet upon completion
			3-2-5	13.5		Cave in at 14 feet
385.0	15.0	Brown, Moist, Medium Dense, Silty Sand (SM)		15.0	7	
			17-12-38	18.5 20.0	50	
380.0	20.0	Boring Terminated at 20 feet				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

BORING_LOG (LONG NAME) 68S-0077A.GPJ F&R.GDT 5/4/15

FROEHLING & ROBERTSON, INC.

BORING LOG

Boring: SWM-2 (1 of 1)

Project No: 68S-0077
Client: Desman Associates
Project: HCC East Garage Expansion
City/State: Columbia, Maryland

Elevation: 403 ±
Total Depth: 20.0'
Boring Location: See Location Plan

Drilling Method: 3.25" ID HSA
Hammer Type: Automatic
Date Drilled: 5/1/15
Driller: Rice

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/Ft)	Remarks
402.8	0.3	3" of Surficial soil containing organics and clayey silt	2-2-4	0.0 1.5	6	GROUNDWATER DATA Water at 2 feet 24 hours after boring completion
		ResiduumBrown, Moist, Loose, Silty Sand with clay (SM-ML)	4-5-6	3.5 5.0	11	
			6-6-4	6.0 7.5	10	
			2-2-3	8.5 10.0	5	
			3-6-5	13.5		
388.0	15.0	Brown, Moist, Medium Dense, Silty Sand (SM)		15.0	11	Water encountered at 14.5 feet upon completion Cave in at 16 feet
			5-9-11	18.5 20.0	20	
383.0	20.0	Boring Terminated at 20 feet				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

BORING_LOG (LONG NAME) 68S-0077A.GPJ F&R.GDT 5/4/15

FROEHLING & ROBERTSON, INC.

BORING LOG

Boring: SWM-3 (1 of 1)

Project No: 68S-0077
Client: Desman Associates
Project: HCC East Garage Expansion
City/State: Columbia, Maryland

Elevation: 400 ±
Total Depth: 20.0'
Boring Location: See Location Plan

Drilling Method: 3.25" ID HSA
Hammer Type: Automatic
Date Drilled: 5/1/15
Driller: Rice

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/Ft)	Remarks
399.8	0.3	3" of Surficial soil containing organics and clayey silt	2-2-5	0.0 1.5	7	GROUNDWATER DATA Dry upon completion
		ResiduumBrown, Moist, Loose, Silty Sand with clay (SM-ML)	3-5-8	3.5 5.0	13	
			3-4-4	6.0 7.5	8	
			2-4-3	8.5 10.0	7	
386.5	13.5	Brown, Moist, Medium Dense, Silty Sand (SM)	3-6-8	13.5 15.0	14	Cave in at 14.5 feet
			15-20-15	18.5 20.0	35	
380.0	20.0	Boring Terminated at 20 feet				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

BORING_LOG (LONG NAME) 68S-0077A.GPJ F&R.GDT 5/4/15

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director	3-14-16 Date
Chief, Division of Land Development	3-14-16 Date
Chief, Development Engineering Division	2.16.16 Date

Prepared For and Owner:
Howard County Maryland
3430 Court House Drive
Ellicott City, Maryland 21043
ATTN: Mr. James J. Irvin
410-313-4401

DESMAN ASSOCIATES

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PARCEL- 275, TAX MAP- 35, GRID- 6
PLAT- 24, BOOK- 21, FOLIO- 47
TOWN CENTER 6/2, LOT C-1
ELECTION DISTRICT: 5 ZONING: NT

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31089 EXPIRATION DATE: 11/21/16

STATE OF MARYLAND · RICHARD L. BOYD · No. 031089 · PROFESSIONAL ENGINEER · 1-15-16

ISSUE

NO.	DESCRIPTION	DATE

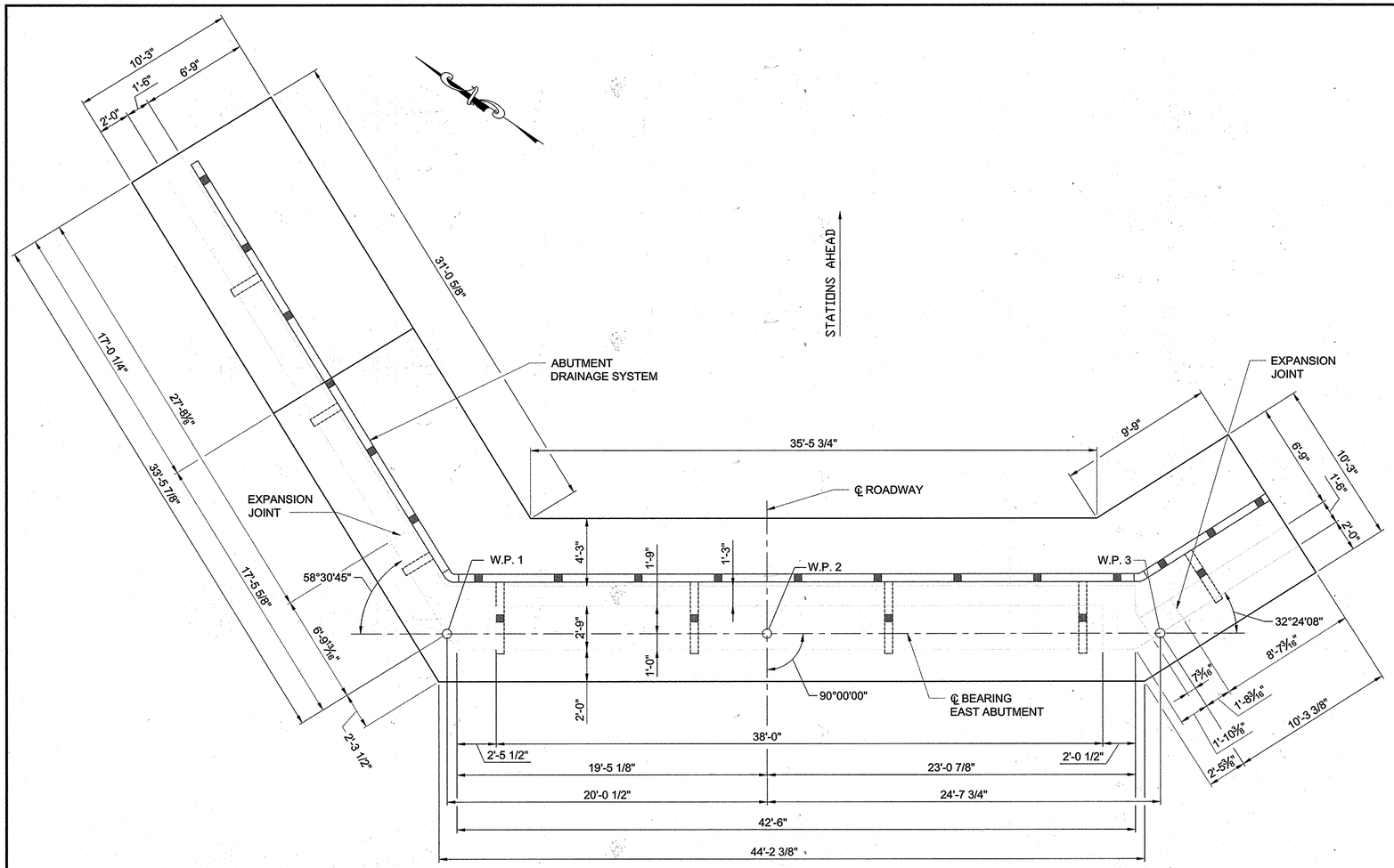
DRAWING TITLE:
BORINGS PLAN

DRAWING NO.
C11.00
SHEET: 23 OF 27

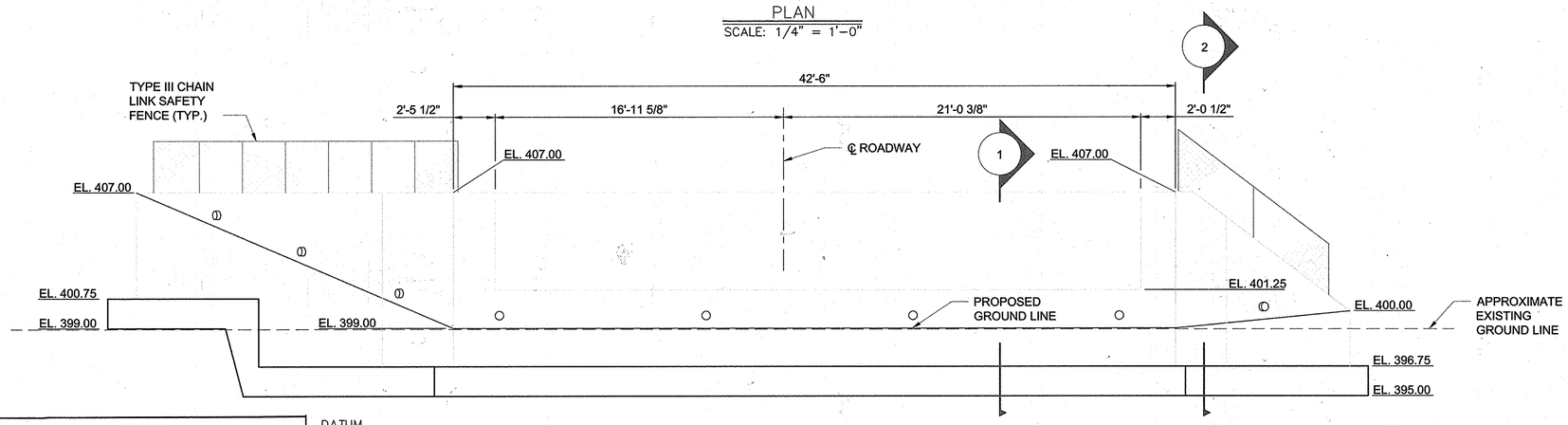
SCALE: N.T.S.
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83



PLAN
SCALE: 1/4" = 1'-0"



ELEVATION
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

SPECIFICATIONS:	HOWARD COUNTY VOLUME IV DESIGN MANUAL STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 2002 FOR DESIGN. CONCRETE DESIGN: SERVICE LOAD DESIGN METHOD. f 'c = 3,500 PSI REINFORCING STEEL DESIGN: f 's = 60,000 PSI.
DESIGN PARAMETERS:	EARTH PRESSURE CALCULATED BASED ON COULOMB THEORY. ANGLE OF INTERNAL FRICTION: 36 DEGREES SOIL BEARING CAPACITY: 2 KIPS PER SQUARE FOOT.
LOADING:	HS-25
CONCRETE:	ALL CONCRETE FOR ABUTMENT BACKWALL SHALL BE MIX NO. 6 (4,500 PSI). ALL OTHER STRUCTURE CONCRETE SHALL BE MIX NO. 3 (3,500 PSI).
REINFORCING STEEL:	REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60. ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, FOR TIES AND STIRRUPS: STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCES. ONLY GRADE 60 CAN BE USED ON THIS PROJECT.
KEYS:	ALL KEYS ARE NOMINAL SIZE.
RESTRICTIONS FOR PLACING AND USING EQUIPMENT ON NEW STRUCTURE/OR STORING MATERIALS ON/OR AGAINST STRUCTURES:	THERE ARE RESTRICTIONS ON PLACING EQUIPMENT ON EXISTING AND NEW STRUCTURE(S) AND STORING MATERIALS ON/OR AGAINST EXISTING AND NEW STRUCTURE(S) ELEMENTS. THE LIMITATIONS BASICALLY RELATE TO LOADS THAT ARE BEYOND MARYLAND'S LEGAL VEHICLES AND/OR POSTED LOAD LIMITS (WHERE APPLICABLE) AND MATERIALS STOCKPILED ON/OR AGAINST STRUCTURE'S OR STRUCTURES' ELEMENTS. FOR DETAILS OF SUCH RESTRUCTIONS SEE SECTION TC 6.14 TITLED "RESTRICTIONS FOR PLACING AND USING EQUIPMENT ON STRUCTURES, OR STORING MATERIALS ON/OR AGAINST STRUCTURES" IN THE CONTRACT DOCUMENTS. IN ORDER TO COMPLY WITH THIS ARTICLE, THE CONTRACTOR SHALL READ SECTION TC 6.14 PRIOR TO COMMENCING ANY WORK ON STRUCTURE(S) IN THIS CONTRACT.

WORKING POINTS		
W.P.	NORTHING	EASTING
1	563490.1133	1347624.2533
2	563473.6011	1347635.6136
3	563453.2968	1347649.5826

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — Date 3-14-16
Chief, Division of Land Development — Date 3-14-16
Chief, Development Engineering Division — Date 2.16.16

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

Prepared For and Owner:
Howard Community College
10901 Little Patuxent Parkway
Columbia, Maryland 21044
ATTN: Mr. Chuck Nightingale
410-772-4296

DESMAN ASSOCIATES

KCI TECHNOLOGIES
Engineers
Planners
Scientists
Construction Managers
936 Ridgebrook Road
Sparks, Maryland 21152
Phone (410)316-7800
Fax (410)316-7953
www.kci.com

LITTLE PATUXENT PARKWAY
GREMPLER REALITY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6, LOT C-1
TAX ACCOUNT #: 15-016663
ELECTION DISTRICT: 5 ZONING: NT
LIBER 15385 / FOLIO 00444

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15554 EXPIRATION DATE: 10/06/17

11/5/16

ISSUE		
NO.	DESCRIPTION	DATE

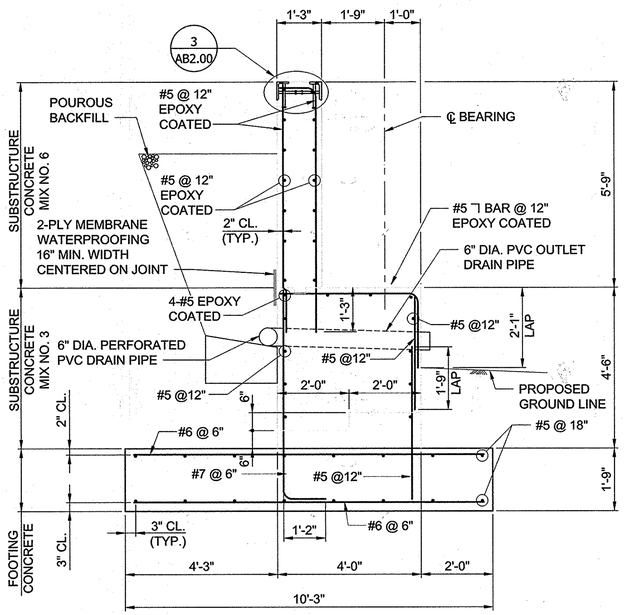
DRAWING TITLE:
BRIDGE EAST ABUTMENT PLAN

DRAWING NO.
AB1.00
SHEET: 24 of 27

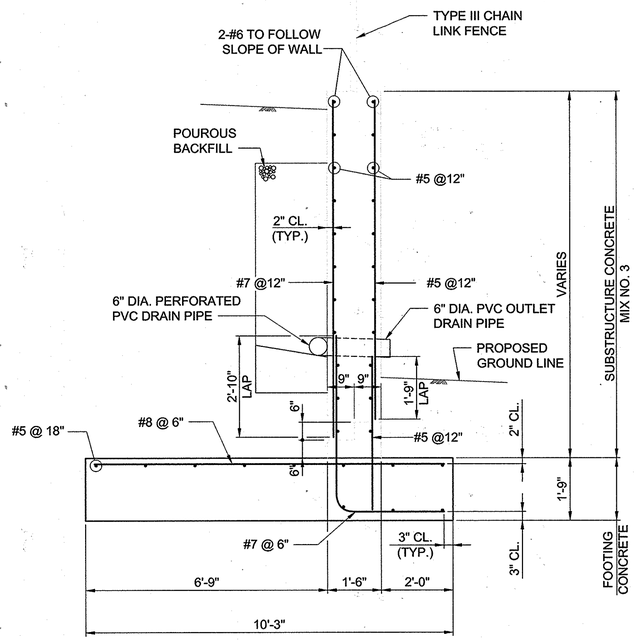
SCALE: AS SHOWN
DATE: JANUARY 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
H.M.K.	J.L.S.	R.D.L.

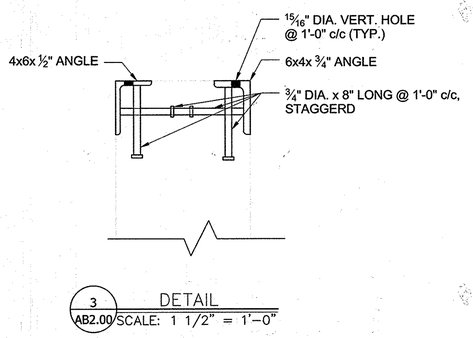
SDP-78-83



1 AB1.00 ABUTMENT SECTION
SCALE: 1/2" = 1'-0"



2 AB1.00 WINGWALL SECTION
SCALE: 1/2" = 1'-0"



3 AB2.00 DETAIL
SCALE: 1 1/2" = 1'-0"

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director	3-14-16 Date
Chief, Division of Land Development	3-14-16 Date
Chief, Development Engineering Division	2.16.16 Date

CONTRACTOR NOTE:
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LITTLE PATUXENT PARKWAY
GREMPLER REALITY INC. OFFICE BUILDING
COLUMBIA, MD
PARCEL: 275, TAX MAP: 35, GRID: 6, LOT C-1
PLAT: 26477
TAX ACCOUNT: #: 15-016663
ELECTION DISTRICT: 5 ZONING: NT
LIBER 15385 / FOLIO 00444

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11/15/16

ISSUE		
NO.	DESCRIPTION	DATE

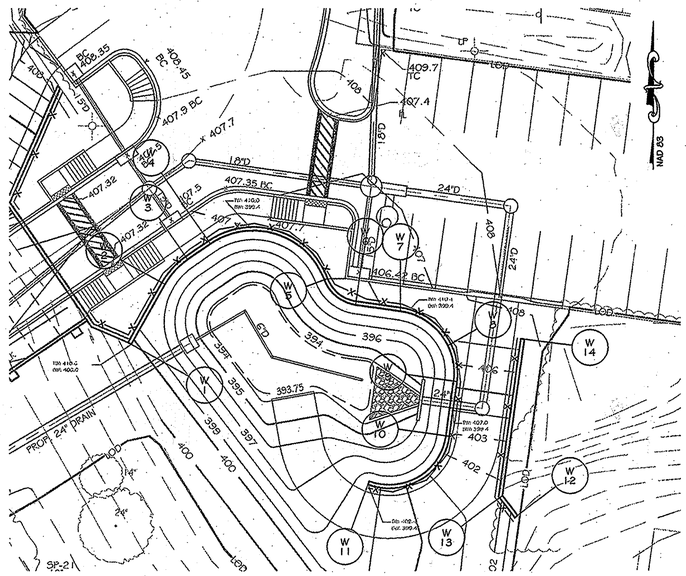
DRAWING TITLE:
BRIDGE EAST ABUTMENT SECTION

DRAWING NO.
AB2.00
Sheet: 25 of 27

SCALE:	AS SHOWN
DATE:	JANUARY 15, 2016
PROJECT NO:	27146550

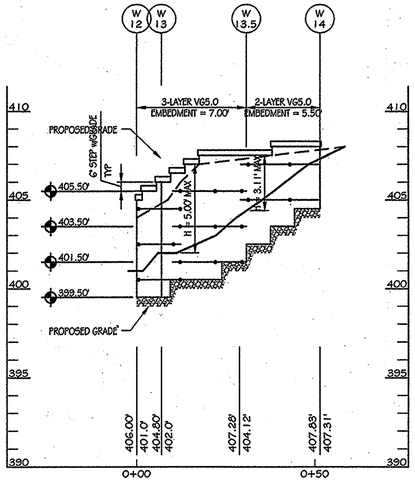
DES.	DRWN.	CK'D.
H.M.K.	J.L.S.	R.D.L.

SDP-78-83



STORMWATER MANAGEMENT FACILITY #2 PLAN

SCALE: 1" = 20'



WALL PROFILE - SWM FACILITY #2

SCALE: 1" = 50' HORIZONTAL
1" = 9' VERTICAL

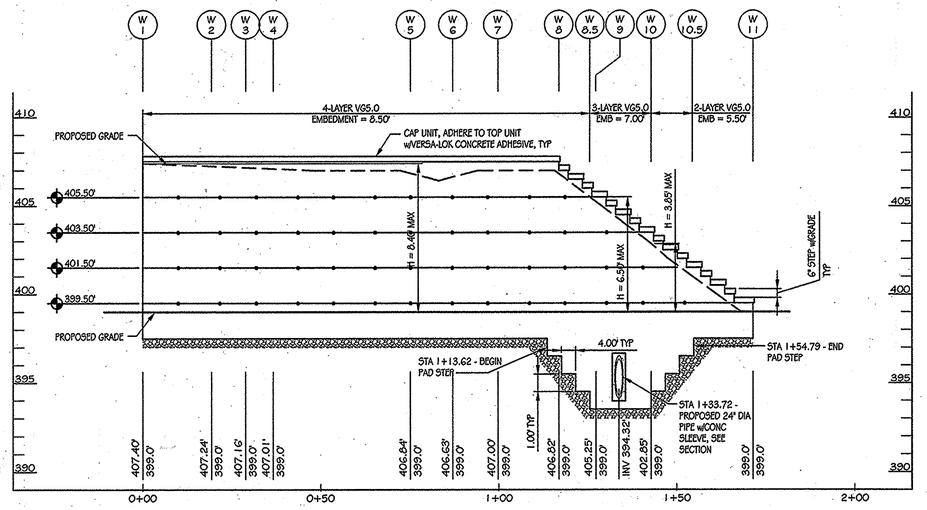
MARK	DESCRIPTION	STATION	TOP SEGMENTAL WALL	TOP OF LEVELING PAD
W-12	WALL END	0+0.00	405.00'	399.50'
W-13	ALIGNMENT CHANGE	0+06.99	406.00'	399.50'
W-13.5	REINFORCEMENT CHANGE	0+30.82	407.50'	402.50'
W-14	WALL END	0+51.46	408.00'	404.50'

PLAN NOTES:

1. REFER TO CIVIL DRAWING C10.04 FOR FINAL GRADING AND LOCATION OF UTILITIES.

2. PROVIDE SEGMENTED RETAINING WALL CONSISTING OF "VERSA-LOK" STANDARD UNITS AND ACCESSORIES. SOIL SHALL BE REINFORCED USING "VERSAGRID 5.0" GEOSYNTHETIC FIBER OR APPROVED EQUAL. REFER TO PROFILE AND SECTIONS FOR GEO-SYNTHETIC FIBER LAYOUT.

3. REFER TO DETAILS AND NOTES, SHEET SW1.01, FOR FURTHER INFORMATION.



WALL PROFILE - SWM FACILITY #2

SCALE: 1" = 20' HORIZONTAL
1" = 9' VERTICAL

MARK	DESCRIPTION	STATION	TOP SEGMENTAL WALL	TOP OF LEVELING PAD
W-1	WALL END	0+0.00	407.50'	397.50'
W-2	ALIGNMENT CHANGE	0+19.27	407.50'	397.50'
W-3	ALIGNMENT CHANGE	0+36.64	407.50'	397.50'
W-4	ALIGNMENT CHANGE	0+75.22	407.50'	397.50'
W-5	ALIGNMENT CHANGE	0+87.11	407.50'	397.50'
W-6	ALIGNMENT CHANGE	0+99.76	407.50'	397.50'
W-7	ALIGNMENT CHANGE	1+16.88	407.50'	397.50'
W-8	BEGIN TOP OF WALL STEP	1+27.26	407.00'	396.50'
W-8.5	REINFORCEMENT CHANGE	1+25.62	406.00'	394.50' / 393.50'
W-9	ALIGNMENT CHANGE	1+33.72	405.50'	393.50'
W-10	ALIGNMENT CHANGE	1+42.79	403.50'	393.50' / 394.50'
W-10.5	REINFORCEMENT CHANGE	1+54.41	401.50'	396.50'
W-11	WALL END	1+71.41	399.50'	397.50'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director — 3-14-16 Date

Chief, Division of Land Development — 3-14-16 Date

Chief, Development Engineering Division — 2-16-16 Date

GRAPHIC SCALE
30' 0 10' 30' 60'
(IN FEET)
SCALE: 1"= 30'

CONTRACTOR NOTE:
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COLUMBIA, MD

PARCEL: 275, TAX MAP: 35, GRID: 6, LOT C-1
PLAT: 26417
TAX ACCOUNT #: 15-2016663
ELECTION DISTRICT: 6, COUNCIL DIST.: 2ND
LIBER 15385 / FOLIO 00444

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18323
EXPIRATION DATE: 07/05/17

STATE OF MARYLAND
KENNETH G. DYER
No. 18323
REGISTERED PROFESSIONAL ENGINEER
1-13-16

ISSUE

NO.	DESCRIPTION	DATE

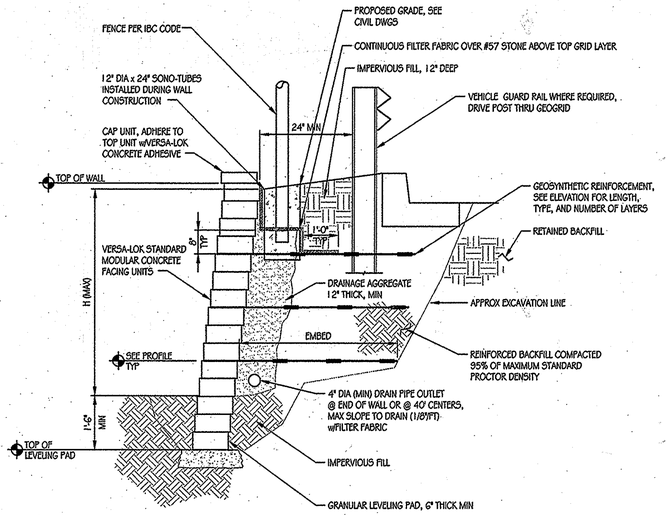
DRAWING TITLE:
SEGMENTAL WALL PLANS & PROFILES

DRAWING NO.
SW1.00
SHEET: 26 OF 27

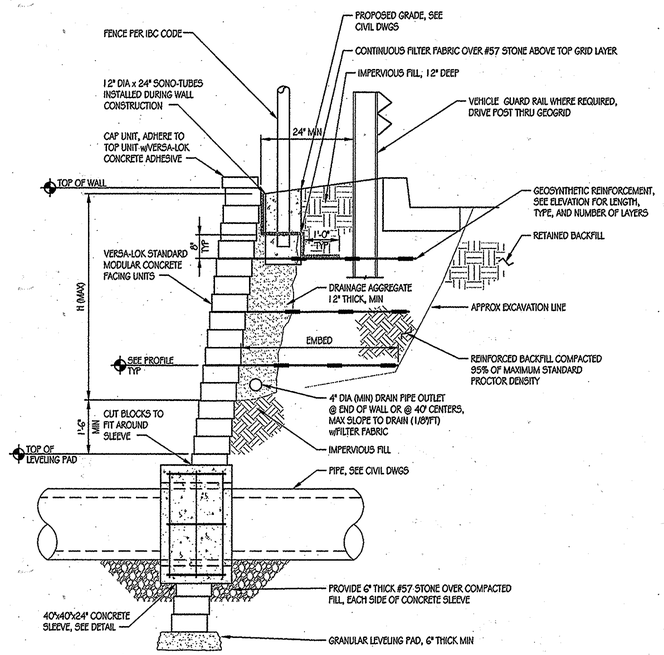
SCALE: 1" = 80'
DATE: January 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

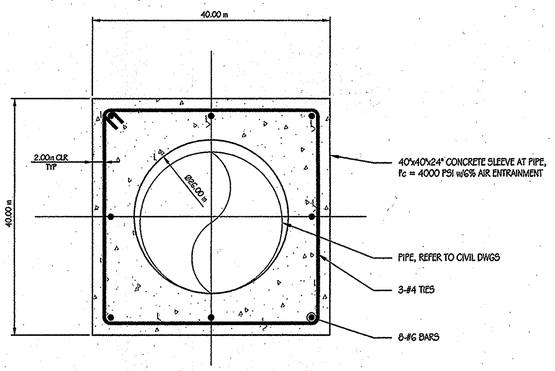
SDP 78-83



1 / S-100 SECTION AT RETAINING WALL
SCALE: 1/2"= 1'-0"



2 / S-100 SECTION AT PIPE SLEEVE
SCALE: 1/2"= 1'-0"



A SCALE: 1"=1'-0" CONCRETE SLEEVE DETAIL

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 12-17-15

APPROVED: Howard County Department of Planning & Zoning

Director	Date 3-14-16
Chief, Division of Land Development	Date 3-14-16
Chief, Development Engineering Division	Date 2-16-16

STRUCTURAL NOTES:

1. BUILDING CODES
   - A. THE 2012 INTERNATIONAL BUILDING CODE (IBC) AND ALL SUBSEQUENT SUPPLEMENTS
   - B. GOVERNING LOCAL BUILDING CODE
2. DESIGN LOADS
   - A. THE STRUCTURE IS DESIGNED FOR THE FOLLOWING SURCHARGE LOADS:

	LIVE LOAD
TRAFFIC LOADING	250 PSF

   - B. THE CONTRACTOR SHALL NOT STORE ANY CONSTRUCTION MATERIALS OR UNDERTAKE ANY CONSTRUCTION OPERATION WHICH WILL EXCEED THE DESIGN LIVE LOADINGS NOTED.
3. SEGMENTAL RETAINING WALLS
   - A. REFER TO "SEGMENTAL RETAINING WALL UNITS" SECTION FOR APPLICABLE CODES AND STANDARDS.
   - B. ASSUMED PARAMETERS FOR DESIGN ARE AS FOLLOWS:
     1. ASSUMED NET ALLOWABLE BEARING CAPACITY = 2000 PSF
     2. EQUIVALENT FLUID LATERAL EARTH PRESSURE = 45 PCF
   - C. CONTRACTOR TO SUPPLY OR VERIFY BACKFILL MATERIALS WITH THE FOLLOWING CHARACTERISTICS:
     1. DRY SOIL DENSITY: 120 PCF
     2. INTERNAL FRICTION ANGLE: 28 DEGREES
     3. COHESION (C): 0
     4. ACTIVE PRESSURE CONSTANT (Ka): 0.36
   - D. ALL RETAINING WALLS ARE DESIGNED USING THE FOLLOWING FACTORS OF SAFETY:
     1. SLIDING = 1.5
     2. OVERTURNING = 2.0
   - E. THE ALLOWABLE SOIL BEARING PRESSURE SHALL BE FIELD VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER AND APPROVED PRIOR TO PLACING FOUNDATIONS. SHOULD THE ACTUAL SOIL BEARING PRESSURE BE LESS THAN 2000 PSF, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
4. SEGMENTAL RETAINING WALL (SRW) UNITS:
   - A. CODES AND STANDARDS:
     1. NCMA "SEGMENTED RETAINING WALL DESIGN MANUAL"
   - B. SUBMITTALS:
     1. MATERIAL CERTIFICATES FOR SRW UNITS AND GEOSYNTHETIC REINFORCEMENT, UNLESS BASIS OF DESIGN MANUFACTURER IS UTILIZED.
     2. ADDITIONAL SAMPLE SUBMITTALS MAY BE REQUIRED BY ARCHITECT/OWNER. REFER TO ARCHITECTURAL DRAWINGS.
   - C. MATERIALS:
     1. SRW UNITS SHALL BE BELGARD STANDARD UNITS OR APPROVED EQUAL, CONSISTING OF MACHINE-FORMED, PORTLAND CEMENT CONCRETE BLOCKS (ASTM C 1372).
     2. NORMAL WEIGHT SRW UNITS: ASTM C 140 USING CONCRETE MEETING 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.
     3. GEOSYNTHETIC REINFORCEMENT WITH MINIMUM LONG TERM DESIGN TENSILE STRENGTH OF 1875 PLF PER ASTM D 4595 AND ASTM D 5262.
     4. LEVELING PAD: COMPACTED SAND, GRAVEL, OR COMBINATION THEREOF (USCS SOIL TYPES GP, GW, SP, AND SW), OR CONCRETE.
   - D. INSTALLATION:
     1. FOLLOW APPLICABLE PROVISIONS OF MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS.
     2. EXCAVATION:
        - a. STRIP VEGETATION AND ORGANIC SOIL FROM WALL AND GEOSYNTHETIC ALIGNMENT.
        - b. CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE OVER-EXCAVATION. OVER-EXCAVATION SHALL BE FILLED WITH COMPACTED BACKFILL MATERIAL AND CONTRACTORS EXPENSE.
     3. LEVELING PAD SHALL BE COMPACTED TO FORM A SMOOTH, LEVEL BEARING SURFACE.
     4. ALL SRW UNITS TO BE INSTALLED WITH A MINIMUM EMBEDMENT AS INDICATED. COMPACT FILL IN FRONT OF EMBEDDED UNITS AT THE SAME TIME AS FILL BEHIND UNITS.
     5. FOLLOW MANUFACTURERS INSTRUCTIONS FOR UNIT INSTALLATION.
     6. ALL GEOSYNTHETIC REINFORCEMENT SHALL BE PLACED WITH THE STRONGEST DIRECTION PERPENDICULAR TO THE WALL. FOLLOW MANUFACTURER'S WRITTEN INSTRUCTIONS AND SPECIFICATIONS.
     7. SRW CAPS SHALL BE PROPERLY ALIGNED AND GLUED TO UNDERLYING UNITS WITH CONCRETE ADHESIVE OR APPROVED EQUAL. CAPS SHALL OVERHANG THE TOP COURSE BY 3/4 TO 1 INCH, MAX.
5. MISCELLANEOUS
   - A. THE CONTRACTOR SHALL LOCATE ALL UTILITIES IN THE AREA OF CONSTRUCTION AND PREVENT DAMAGE TO THEM. SHOULD DAMAGE OCCUR TO ANY UTILITIES, THE CONTRACTOR IS REQUIRED TO REPAIR THE DAMAGE TO THE SATISFACTION OF THE OWNER AT HIS OWN EXPENSE.
   - B. THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION AND DIMENSION OF CHASES, INSERTS, OPENINGS, SLEEVES, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS WHICH IMPACT THE STRUCTURAL COMPONENTS.
   - C. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS SHOWN ON THE CONTRACT DRAWINGS BEFORE PROCEEDING WITH CONSTRUCTION.
   - D. SCALES SHOWN ON THE STRUCTURAL CONTRACT DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DIMENSIONAL INFORMATION SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS.

CONTRACTOR NOTE:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO DAMAGE ANY EXISTING PAVING, CURB & GUTTER, SIDEWALK OR OTHER SITE FEATURES WHICH ARE TO REMAIN. SHOULD DAMAGE OCCUR, CONTRACTOR SHALL REPAIR TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

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PLAT: 23647
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ELECTION DISTRICT: 5 ZONING: NT
LIBER: 15385 / FOLIO 00444

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LICENSE NO. 18323
EXPIRATION DATE: 07/05/17

STATE OF MARYLAND — KEVIN L. DELL — No. 18323 — PROFESSIONAL ENGINEER
1-13-16

ISSUE		
NO.	DESCRIPTION	DATE

DRAWING TITLE:
SEGMENTAL WALL NOTES & DETAILS

DRAWING NO.
SW1.01
SHEET: 27 OF 27

SCALE: 1" = 80'
DATE: January 15, 2016
PROJECT NO: 27146550

DES.	DRWN.	CK'D.
R.L.B.	C.T.B.	R.L.B.

SDP 78-83